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THE BACTERIOLOGY AND HISTOLOGY OF OZENA.*

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NAPLES.

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Much has been written during the past two years upon the etiology of this form of atrophic rhinitis from a bacteriologic point of view. Some have urged that the pseudo-diphtheria bacillus is the exciting agent concerned; others contend that it is the bacillus mucosus which is at work, while still others affirm that the disease is due to the combined action of the two micro-organisms. Opposed to all these radical views we have the theory of a fourth class, comprising those who claim that there must first be a local predisposition for the disease; in other words, that the microbic factor is but secondary and not capable of provoking the disease in the absence of the local predisposition. Having observed then the diversity of opinion as to the etiology of the disease and likewise as to its treatment, based, of course in most instances on erroneous ideas, I determined to pursue an investigation along these lines, taking my observations from a close study of 42 cases of true ozena which presented types of the disease from the

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mildest to the most severe and occurring in patients ranging in age from 5 to 50 years. I have endeavored to trace out the role played by bacteria in the causation of the disease in relation to these two factors of the ozenous triad, viz., fetidity and crusts. I have thus established the value of a bacteriologic examination of the ozenous crusts and the importance which should be attached to their constant presence.

Faithful to my old opinion about this phase of rhinopathy, I will say here in the beginning of my dissertation what perhaps should be said in conclusion, that I hold the micro-organisms concerned as only secondary in their effects to the primary factor of favorable soil for their development. I consider that there are other accessory causes for the development of ozena to which the presence and action of bacteria are secondary. If this disease were due entirely to the activity of a specific micro-organism and not to a local predisposition, how could we explain the fact that the disease is a strictly local one and of a markedly chronic character? I contend that the bacillus (bacillus mucosus) is not the prime etiologic factor in ozena, but that this micro-organism finds a favorable soil for its development in the nasal fossae which are endowed, by virtue of their embryologic and, also their teratologic natures, with features highly commendable for a microbic habitat; moreover, in nasal fossae which are normal and not so endowed, there will be no growth of this micro-organism. I shall not attempt to explain just how the micro-organism begins its work in this affection, nor what the nature of this work is, but shall leave that for other investigators.

I subjoin a list of the patients, arranged in classes according to age:

From	5 to 10 years,	- -	4 cases.
"	10 to 20 "	- - -	10 "
"	20 to 25 "	- -	17 "
"	25 to 35 "	- - -	6 "
"	35 to 50 "	- -	5 "
		Total, -	42

In these 42 cases of ozena I made bacteriologic examina-

tions of the crusts from the nose and found great numbers of the encapsulated bacilli of Loewenberg, or the *bacillus mucosus ozena* of Abel. In 28 instances I isolated a bent and granular form of the pseudo-diphtheria bacillus which according to the general rule did not stain by Gram's method. I can confirm the statements of Abel and Loewenberg that the bacillus mucosus is not found on the outer surface of the crusts where we find the common saprophytes, but that it seems to thrive and, in fact, is found only on the inner surface next its point of attachment to the nasal mucous membrane, and also in the submucosa after the crusts have become detached.

I have been able to isolate the bacillus mucosus in all the 42 cases; the pseudo-diphtheria bacillus was found only 8 times; the staphylococcus pyogenes aureus 9 times; the staphylococcus pyogenes albus 7 times; the sarcina aurantiaca once; the bacillus subtilis twice; the megaterium once; streptococcus pyogenes, in long chains, 4 times; a filamentous bacillus once; bacillus prodigiosus once; non-classified cocci, twice; bacillus pyocyaneus, green variety, 7 times; the tubercle bacillus once in a patient who had been in contact with a phthisical patient. It is evident from these findings that the bacillus mucosus is present in every case of this form of atrophic rhinitis—a fact already established by Loewenberg (1888–94), and by Abel (1894), in a close study of 100 cases of ozena. According to the classification of Kruse, the bacillus mucosus belongs to the fourth group of schyzomycetes, between the bacillus aerogenes and that of rhinosclerema. Morphologically it is to be placed with the bacillus of Friedlaender, the bacillus of Frisch, the bacillus of Passet, the encapsulated bacillus of Bordoni-Uffreduzzi, the bacillus coli immobilis and the bacillus lactis aerogenes of Escherich. It has been confounded by many experimenters with the bacillus of Friedlaender, but it differs from that micro-organism in many particulars.

In the crusts, the bacillus mucosus is a short rod, measuring from 1 to 1.25 μ in width, of variable length, with rounded ends; often it is grouped as a diplo-bacillus and surrounded by a capsule visible by means of all the methods of staining, and especially by Ribbert's method.

At times it assumes a size twice or thrice the normal dimensions.

In different cultures of recent date, the bacillus mucosus may take on a protean form; it sometimes takes the form of a short diplo-bacillus and sometimes appears as longer rods. In certain culture media, notably glycerin-agar, blood serum, etc., a capsule can be observed. In old cultures various involution forms can be observed—from chains of cocci and slightly colored filamentous forms to irregularly swollen and distorted bacilli. Inoculations afterwards from these old cultures will eliminate the suspicion of contamination. When the micro-organism is passed into the organisms of inoculated animals, viz., guinea-pigs, rabbits, mice, cultures present the original form of a short rod or an encapsulated diplo-bacillus. The capsule can be made to disappear by successive transplantations.

The bacillus mucosus is not stained according to Gram, but stains easily with the aniline stains. It develops readily upon all the ordinary culture media provided they have a slightly alkaline reaction. In nutrient broth, at the end of 24 hours, at 37°C, we see a slight cloudiness or a deposit of a whitish or greyish white color at the bottom of the tube. In most cases the culture has the nauseous odor of stagnant mucus.

In plate cultures upon agar-agar, three kinds of colonies are to be observed:

1. Superficial colonies: (a) small, round, closely-crowded colonies (with minimum dilution); (b) pearly colonies, round as pin-heads, convex, resembling dew-drops, transmitting light poorly, and with a tendency to spread and to form irregular groups (with medium dilution); (c) large discoid or convex colonies, of a "mucus-like" or whitish mucoid color, having a diameter of 1/2 to 3/4 centimeters, and having a tendency to coalesce in the form of a mucus-like deposit on the plate (with maximum dilution, 5, 6 and 10 colonies to the plate).

2. Deeper colonies, arranged perpendicularly to the surface of the plate, of small size, always lozenge-shaped and of an ivory-white color.

3. Deep colonies of a form resembling the round superfi-

cial colonies; they are seen scattered through the depths of the medium.

Under the low power of the microscope, the round superficial colonies and the lozenge-shaped bodies appear as colonies with an opaque, dark-colored, rhomboidal center and yellowish, granular border.

Upon agar-agar, as streak cultures, they appear as a thick, elevated, slimy band, with more or less sharply-defined edges; at the edges separate round, opaque colonies develop. By degrees, in the course of development, the whole slimy growth falls to the bottom of the tube.

Upon glycerin-agar, the growth occurs more quickly so that at the end of 12 hours at 37°C, there is an abundant colony. Bacilli grown on this culture medium are encapsulated.

Gelatin is not liquified by this micro-organism. Plate cultures upon gelatin are like those upon agar. In stab-cultures upon gelatin, during the first days of the growth we generally see a hob-nail growth like that of Friedlaender's bacillus with more of a tendency to spread over the surface of the medium. Along the stroke we see the development of a small series of round colonies or a break here and there along the stroke. Gas-production was observed in 30 per cent. of the cases.

Upon liquid blood serum, growth is faint, but it becomes more abundant if 20 per cent. nutrient broth is added to it.

Upon coagulated blood serum, the growth is the same as that upon glycerin-agar, even to the encapsulation of the bacilli.

Upon potato, the bacilli grow as a whitish grey colony, sometimes brownish and this coloration is given to the substratum of the potato.

Coagulation is produced in milk at the end of 48 hours, at 37°C. This finding is different from that of Loewenberg. The fact that the bacillus is capable of provoking fermentation, however, was proved by the following researches upon sugar.

In fresh eggs, after from 48 to 72 hours at 37°C, we see slimy flakes appear, and can detect a very disagreeable odor.

In baked eggs, the yolks seem to be rendered mealy, and

appeared to be disintegrated around the periphery. Development is vigorous.

In fluids deprived of albuminous substances (Arnauld and Charrin, Hutschinsky) the bacillus mucosus develops very feebly, and it is only at the end of 15 days that a culture can be obtained.

The power of decolorization possessed by these micro-organisms is seen in liquids colored with fuchsin or methylene blue.

The bacillus mucosus has fermentation powers in different saccharine media.

Lactose broth colored with red litmus is not changed for 24 hours, but at the end of that time it begins to lose its color.

If melted lactose agar is inoculated with the bacillus mucosus and is then solidified, gas is produced in the substratum and bottom of the tube to some extent, but the micro-organism very quickly dies out.

In saccharose bouillon (2 per cent.) the reaction produced is strongly acid.

Glucose and levulose are fermented by this bacillus just as it ferments lactose.

It does not produce indol, but produces creatinin.

In bouillon containing urea, the bacillus grows feebly without the development of an ammoniacal odor, ammoniacal vapors not being produced in the presence of hydrochloric acid.

The action of light which, in the majority of cases, tends to retard the development of micro-organisms, seems to favor that of the bacillus mucosus, and at the same time does not tend to lower its pathogenic powers. After an exposure of a culture for 24 hours to the direct rays of the sun, at 35°C, it was kept for several months, and at the end of that time it was found to be possessed of marked pathogenic powers for guinea-pigs. The only change produced by the action of the sun's rays upon the bacilli was a marked swelling at one end, looking quite like a spore-formation.

The bacillus mucosus can live in temperatures as high as 56° to 60°C. At the end of a year, the cultures of the bacillus mucosos retain their vegetating powers.

Following out the thought of the difficulty in the thera-

peusis of this disease, on account of the anatomy of the nasal fossae, I made some experimental therapeutic observations *in vitro* with this micro-organism. The same thing was done with the pseudo-diphtheria bacillus, and I will speak of that later on. The following list comprises the antiseptics used in these experiments:

Trichloracetic acid, 3, 4, 5, 6, 9 per cent. solutions.
Chromic acid, 1.05 per ct. 1/500 and 1/1,000 "
Corrosive sublimate, 1 to 1000, 2000 and 5000 "
Trichloride of iodine, 3, 1½ per cent. 0.75 per cent. "
Silver nitrate, 2, 1, 1/2 per cent - - - "
Actol, 2 per cent, 1 per cent. and 1/2 per cent. - "
Microcidine, 3, 2, 1 1/2 per cent. - - - "
Drops of formalin—1 drop to 120 ccm. of water,
1 " " 60 " " "
1 " " 30 " " "
Salicylic acid, 1, 1/2, 1/4 per cent. solutions.
Water charged with oxygen in 80, 75, 50, 25 per cent solutions.
Potassium carbonate, 4, 2, 1 per cent. solutions.
Tincture of iodine, 20, 4, 2, 1 per cent. solutions.
Balsam of Peru, 100, 50, 25 per cent. solutions.
Creosote, 30, 25 per cent. solutions.
A pinch of tobacco in 5 ccm. of a culture.

Inoculations were made after 10 minutes, one-half hour, two hours and four hours contact with the antiseptic substance. After from ten minutes to a quarter of an hour's contact with the substances which are best tolerated by the nasal mucous membrane, I can verify the bactericidal action of only trichloracetic acid, 100 per cent. creosote, 4 per cent. trichloride of iodine and corrosive sublimate in from 1 per cent. to 1/2 per cent. solutions: a 1 to 5,000 solution is useless.

Formalin is only bactericidal in the proportion of 66 drops to 1,000 of water—a solution insupportable by the nasal mucous membrane. I wish to make a note here of that fact that several drops of formalin manufactured by the house of Schering of Berlin, were put into an agar culture of the bacillus mucosus; after several months another tube inoculated from this culture gave a growth of the bacillus mucosus. Salicylic acid, oxygenated water, potassium carbonate, nitrate of silver, microcidine, tincture of iodine,

balsam of Peru and a pinch of tobacco, in solutions which could be tolerated by the nasal mucous membrane, show an absolute innocuousness for the bacillus mucosus. As we shall see later on, the results obtained with the pseudo-diphtheria bacillus were quite different.

An explanation for the resisting powers of this micro-organism for both physical and chemical agents (light and antiseptics) may be found in the presence of the capsule which is composed of a slimy substance secreted by the bacilli, making a slimy mass upon agar and gelatin plates, and in the bottom of bouillon cultures. This characteristic does not seem to be secondary to the viscid nature of the ozenous crusts.

62 animals were inoculated with the bacillus mucosus. In making the inoculations, the animals were divided into 9 series, each series representing a particular case of ozena. The bacillus was found to be slightly pathogenic for guinea-pigs, rabbits and white mice, by either intra-peritoneal or subcutaneous inoculation. The most pathogenic effects were seen when the inoculation was made into the pleural cavity, but owing to the technical difficulties involved in this method, it is impossible to say that the pathogenic action of the bacilli *per se* was responsible for the results obtained. All of the inoculations were made with broth cultures which had been grown for 24 hours at 37°C. With 1 to 1 1-2 ccm. of the broth cultures, intra-peritoneal inoculations in guinea-pigs produced death in from 7 to 12 hours. By successive passage of the micro-organism through the bodies of the animals, the virulence was increased to such a degree that death of a guinea-pig was induced in 4 1-2 hours, of a rabbit in 6 hours, and, with a dose of 0.1 ccm., of a white mouse in 9 hours. When subcutaneous inoculations were made into guinea-pigs with cultures obtained directly from the crusts, after the lapse of two or three days, we noticed a marked painful infiltration around the site of inoculation which was succeeded by a pouring out of a fibrino-purulent exudate. On the contrary, death always ensued when cultures of the bacillus mucosus were used, in from 15 to 19 hours. The white mice were most susceptible to subcutaneous inoculation. Post mortem examination of these animals showed in all cases an acute or purulent peritonitis, with fibrinous

flakes covering the different abdominal organs which were all markedly congested. The only change to be noted in the thoracic cavity was an occasional congestion of the lungs, unless, of course, the injection was made into the pleural cavity. Microscopic examination of the blood, the peritoneal exudate and the fibrinous flakes revealed the presence of numerous diplo-bacilli surrounded by a capsule. Bouillon cultures from the blood gave off the same disagreeable odor which emanated from the ozenous crusts.

By successive inoculations with small quantities of broth cultures, after a local infiltration which disappeared, the condition of the animal became refractory to larger doses of the cultures. Inoculations with serum from these animals mixed with a virulent culture of the bacillus mucosus were negative, while animals which were inoculated with the virulent culture alone quickly succumbed. The same phenomenon was observed when cultures were exposed to the antiseptic agents already recorded.

Attempts were made to inoculate animals with the bacillus by inoculating the mucous membrane of the nasal fossæ after it had been thoroughly scraped, but without avail. This is not to be wondered at when we remember that in veterinary pathology we have no mention of animals being affected with ozena or any fetid disease resembling it.

I will now report the results obtained in a parallel series of experiments with the pseudo-diphtheria bacillus which had been isolated in seven instances from ozenous crusts.

These experiments were carried on with the view of establishing or refuting the pathogensis of the pseudo-diphtheria bacillus and also, of noting the effect of the antiseptics upon it in the same proportions that we used in experimenting with the bacillus mucosus. In six guinea-pigs inoculated both by the intra-peritoneal and subcutaneous methods, with from 1 to 3 ccm. of a glycerin-bouillon culture, no effects could be seen after from 24 hours to 7 days and what is more, no local edema ensued such as has been described by Belfanti and Della Vedova. This result confirms the observations of Spronck, of Utrecht, who concluded, after a patient series of experiments, that the pseudo-diphtheria bacillus has nothing in common with the Klebs-Loeffler bacillus from a patho-

genic point of view, although this observation is not in accord with the experience of A. Peters with seven cultures of the Klebs-Loeffler bacillus and eleven of the pseudo-diphtheria bacillus. I tried several times to inoculate animals by introducing crusts into pockets under the skin but failed signally, not even edema being produced. I found that the antiseptic solutions which were but relatively bactericidal for the cultures of the bacillus mucosus were strongly inimical to the growth of the pseudo-diphtheria bacillus, even after as short an exposure as ten minutes. Cultures exposed ten minutes to the action of such antiseptics as trichloracetic acid, etc., were barren of pathogenic action when injected into guinea-pigs. I have arrived at the conclusion that the pseudo-diphtheria bacillus is only a simple, innocent saprophyte as seen in the nasal fossæ of ozenous patients. This saprophytism has been known for some time; Hoffman, in 1887, isolated it in twenty-six cases from the buccal mucous membrane. The fact is worthy of note that the bacillus mucosus was found by me in that part of the ozenous crusts which were adherent to the mucous membrane, while the pseudo-diphtheria bacillus and other micro-organisms, was found on the outer surface.

I have been accused of having a groundless prejudice against the use of diphtheria antitoxin in cases of ozena; I will say that I have always opposed the many illusory therapeutic agents which have been advocated during my twenty-five years of rhinologic practice and will not admit their efficacy unless their administration is rational; certainly, the use of the diphtheria antitoxin is not so in cases of ozena. It is inconceivable to me how the serum of a bacillus which is *not* the etiologic factor in the causation of ozena can be efficacious in its cure; it is a fact well established by my own observation and that of others that the pseudo-diphtheria bacillus is not concerned in the production of ozena but it is only an incident. The error of using the antitoxin of diphtheria in such cases becomes even more apparent when we consider that, while in true diphtheria, 1,000 to 3,000 units have been sufficient to obtain certain immunizing effects, the observers, Belfanti, and Della Vedova, have used from 20,000 to 50,000 units as immunizing agents in cases of ozena. The use of the

antitoxin of diphtheria in ozena is not only without curative effects but it is expensive and is not without its harmful effects upon the patients. In order to substantiate the above statements I will detail the use of antitoxin of diphtheria in twelve cases of true ozena in patients varying from very tender years up to adult life. I injected from 20,000 to 25,000 units in all these patients at short intervals. In the course of this treatment I observed the following effects; I may add that these effects disappeared with the cessation of the antitoxin treatment:

1. Hyperemia with engorgement of the nasal mucous membrane.

2. Excitation of the glandular secretion of the nasal mucous membrane, with diminution of the mucus stagnation and lessening of the fetidity.

3. Upon microscopic examination of the crusts, I noticed a decided decrease in the number of the bacillus mucosus and a corresponding increase in the number of the pseudo-diphtheria bacillus.

These results, at first glance, seem to justify the tremendous enthusiasm of the novice in the use of the antitoxin treatment; we shall see, however, that the glandular excitation is responsible for the diminution in the number of the bacillus mucosus and consequently of the decrease in the fetidity that may be present. The same results can be obtained by the internal use of the iodide of potassium or sodium. The use of the artificial serum has only one redeeming feature and that is its temporary effect of reducing the fetidity by the simple physiologic effect of increasing glandular activity.

I have had the best results in the treatment of ozena by thoroughly curetting the nasal mucous membrane, followed by the use of successive applications of antiseptics in the hope that repair of the ozenous patches will ensue. If we take into consideration the fact that the deeper layers of the nasal mucous membranes which are exposed by such a curettage harbor no micro-organisms, we become sensible of the fact that this is the most rational treatment for this rebellious affection. Although I was possessed of the idea in my researches along this line that the above detailed surgical treatment was of the most efficacious, I still clung to the hope of finding a useful

antitoxin derived from the cultures of the bacillus mucosus, the supposed pathogenic agent at fault in this affection. I may say, however, after a conscientious trial, that the use of such a serum was without good effects. After establishing the fact that the bacillus mucosus produced toxins, I inoculated a Fernbach flask containing glycerin boullion, 2 per cent., with a culture obtained from the heart of a guinea-pig which had succumbed nine hours after inoculation. A centimeter of the culture was used and kept in the thermostat at 37° C for 12 days. I then added a $\frac{1}{2}$ per cent. solution of carbolic acid to destroy the micro-organisms which might be present. I injected $\frac{1}{3}$ ccm. into four guinea-pigs by the subcutaneous method; one weighed 380 grammes, another weighed 375 grammes and I inoculated this one by the peritoneal method. The third and fourth pigs had been previously inoculated with small doses of the bacillus mucosus; these received each 1 ccm. and $\frac{1}{2}$ ccm. of the supposed toxin. The four pigs gave not the slightest sign of a reaction. To eliminate the question of a possible neutralization of the toxins by the use of carbolic acid, two cultures were subjected to 60 degrees C for ten minutes and sterilized by control; two pigs were then inoculated and neither showed any reaction with the exception of a local infiltration of such a slight degree that it disappeared in a few days.

I tried to filter cultures with the Chamberland filter but without success on account of the viscid nature of the material. From this it may be fair to conclude that the pathogenic property lies not in the toxin elaborated but in the bacillary vitality.

I probably would have been able, if I had tried, to find a bactericidal serum in lieu of an antitoxin by slight immunization of animals with tentative doses of the bacillus directly inoculated into animals, but the results which I obtained with the serum discouraged me from making any such attempt. Prof. Paltauf, of Vienna, told me that he had tried an extract of the toxin of the bacillus of Friedlaender without success: the near parentage of the two micro-organisms explains the similitude of the experimental results already obtained. The difference in morphology and cultural characteristics between the

bacillus mucosus, the bacillus of Friedlaender and that of rhinoscleroma is hardly perceptible. The culture of the bacillus mucosus is more viscid and fluid than that of the pneumococcus, but resembles very much that of the bacillus of Frisch. It may be well to add here that I made a comparative study of the three micro-organisms and that I was assisted in this through the courtesy of Prof. Pane who sent me a culture of the bacillus of Friedlaender and of Prof. Oro, of the dermatologic clinic of Naples, who sent me a culture of the bacillus of Frisch. The bacillus of rhinoscleroma is stained according to Gram differently from the bacillus of Friedlaender and the bacillus mucosus. Wilde has published a note contradictory to this, saying that the absence or presence of Gram's stain of the pneumococcus is due to relative hardness or softness of the micro-organism, while Ducrey, of Pisa, affirms that he never succeeded in staining the bacillus of Frisch according to Gram. Paltauf has said that in organs hardened in Müller's fluid the bacillus of Friedlaender loses the Gram stain; Schmidt too has proved experimentally that the ordinary colon bacillus retains the Gram stain provided it has grown in greasy media for a long time. As for the differential test proposed by Loewenberg between the pneumococcus and the bacillus mucosus, that the former causes a coagulation of milk while the latter does not, I can say that in seventeen cases I have seen a decided coagulation of milk by the bacillus mucosus. On the other hand, Abel, Kruse and Wilde maintain that the pneumococcus does not cause milk coagulation; Paltauf and Loewenberg say that the pneumococcus causes milk coagulation while Denys and Martin observed this coagulation of milk by the pneumococcus in a few instances. Ducrey has established the fact, by comparative experimental studies upon several encapsulated bacilli found in the naso-pharynx, that it is quite difficult to isolate them as individual species and that there are many varieties of encapsulated bacilli found in the rhino-pharyngeal mucous membrane which bear such a close relationship morphologically to the bacillus of Frisch that it is impossible to differentiate them. This is particularly true of several varieties found in cases of rhinoscleroma which Ducrey could not differentiate from the

bacillus of Frisch. Close study of the chemic functions of these micro-organisms give us but a faint clue to their true classification. For instance, Schmidt has cultivated a colon bacillus which will not coagulate milk; Vincent has found a colon bacillus in water which will not produce gas in lactose bouillon; Sanarelli has isolated a colon bacillus which will not give the indol reaction and has found a cholera vibrio which will not produce nitrates. Kruse and Pansini have demonstrated that there is a pneumococcus which will not coagulate milk.

As for a possibility of differentiating these micro-organisms by their pathogenesis, I can say that the results of different observers have differed in that regard also: for instance, while I succeeded in clearly proving the pathogenesis of the bacillus mucosus for guinea-pigs, rabbits and white mice, Abel could not always do so. I succeeded in producing a passing slight edema of the tissues by direct inoculation with the ozenous crusts; Abel could not do so. Yet we were both working with the same micro-organism, i. e., an encapsulated bacillus which we had invariably found present in ozenous crusts. Finally, my experience has not been in accord with that of Abel and Loewenberg who write of an *agreeable* odor that arises from their cultures of the bacillus mucosus; on the contrary, I noted a *disagreeable* odor about these cultures—an odor reminding me of the disagreeable odor of stagnant mucus which is to be noted in connection with cases of true ozena.

I would add that I isolated the bacillus pyocyaneus in seven cases of ozena, the typical green color being produced in the media. I attribute the green color of the ozenous crusts to the presence and action of this micro-organism.

II.—HISTOLOGY.

I shall now give an account of the histologic examination of the inferior turbinate bodies in cases of true ozena, with all the symptomatology in many different phases of the disease. It may be well to speak of the different theories in regard to the histology of the affection. From a perusal of the literature upon the subject one is struck

with the apparent mystery surrounding the true nature of the disease, as explained by the many different eminent authorities in this field. Krieg has well said that "this affection has been an enigma to us ever since it was first observed." According to Gottstein, E. Fraenkel, and Zuckerkandl, it consists of an inflammation of the mucous membrane which terminates by gradual atrophy; Habermann, Krause and Rethi say that ozena is a process of fatty degeneration of the glandular epithelial cells and of the recently formed connective tissue; Schuchardt considers that it is a metaplasia of cylindrical epithelium. During the past year, Drs. Cholewa and Cordes, of Berlin, have published an exhaustive and valuable contribution to the pathology of this affection. These authors attempt to prove that the initial atrophy resides in the bony framework of the turbinate bodies while the mucous membrane is only indirectly affected. They say that an energetic and rapid lacunar resorption of the osseous substance takes place, that the interior as well as the exterior layers of the bone are affected, under the influence of the periosteal alteration by numerous osteoclasts or myeloplacques. In the physiologic state, the osseous resorption is rapidly compensated for by the process of apposition: from the very first year of life the bone is formed from the periphery by numerous layers of osteoblasts which constitute a new lamellary system, causing the increased growth and thickening of the bone. In ozena, this process of restitution or apposition is at fault and is in a state of abeyance, while resorption continues to grow on as rapidly as before. This lack of restitution or repair is not only limited in ozena to the inferior turbinate bones but it is also true of the whole nasal skeleton in many cases; thus, these authors explain the relative frequency in ozenous patients of "flat-nose" or of the embryonic nose, and in general of the diminution in the length of the partition (Hopmann), resulting in an anomoly of development of different parts of the nose. The beginning of the process in the bone explains the fact that in cases where the mucous membrane is but slightly changed, the bone has already become thinner than normal and presents numerous lacunæ of Howslip and osteoclasts both upon the periosteal border and in the medullary spaces. The

hypothesis then to be gathered from the above is that ozena is a consequence of an arrest of development either of the turbinate alone or of the whole nasal skeleton; this is not a new idea nor is the observation concerning the histologic examination of the lacunæ of Howslip and of the osteoclasts recent, but the merit belongs to these authors, Cholewa and Cordes, of combining the etiologic relation of the disease ozena with the histologic researches already made. Again consulting the literature upon this disease, we see that Zaufal says that ozena begins, perhaps, as an arrest of development of the turbinate; Potiquet has demonstrated that ozena occurs by preference in patients with a poorly developed nasal skeleton, especially when the transverse dimension is increased, which Broca attributes to an arrest in development; Chatellier is of the opinion that ozena is a form of rarifying osteitis; Schestakow considers it to be a primary atrophy of the turbinate bones caused by an alteration in development upon which is grafted a rarifying osteitis. In short, all of these authors conclude in a rambling sort of fashion that the faulty development of bone will favor the beginning of ozena, but not a single one can base their assertions upon delicate histologic researches. On the contrary, Krause, Habermann and Zuckerkandl have noted histologically that there is a form of progressive atrophy of bone terminating in the reduction of the bone to a thin sheet; they cite also a form of lacunar resorption with lacunæ of Howslip and osteoclasts, but the two authors first mentioned, i. e., Krause and Habermann, attach an etiologic importance only to the fatty glandular degeneration, while Zuckerkandl affirms that simple ozena is a chronic catarrh terminating either in an atrophy of the mucous membrane or of the turbinate bone. However, he says that perhaps the atrophy of the bone induces that of the mucous membrane and admits that even though the atrophy of the entire turbinate body attacks all parts of it with equal intensity, it is the *osseous* atrophy which predominates. Cholewa and Cordes demonstrated conclusively that this osseous atrophy predominates and precedes the atrophy of the mucous membrane. According to these two authors, this process of resorption is congenital or continues from fetal life; they have no

belief in an inflammatory causation. Upon this point my researches do not agree with theirs; they also call attention to a periosteal proliferation, a fibrous alteration of the cells and the presence of the granular cells of Ehrlich in the periosteum and in the medullary spaces.

Cholewa and Cordes affirm that the ozenous turbinate bones are so soft that they can be cut without the previous process of decalcification so commonly resorted to; I do not agree with them in this regard, for I tried to imbed in parafin and cut sections without previous decalcification and was unable to obtain satisfactory results in that way. All sections which I made were kept for from five to ten days in picric acid for decalcification. I do not believe that a resorption of the calcareous salts of the bone takes place in ozena as I was able to make very thin sections and obtained almost as good results as if I had been working with any osteoid substance.

The comparison made by these authors of ozena with osteomalacia on account of the resorption of calcareous salts which takes place in osteomalacia and which they pretend takes place in ozena, is faulty by reason of the fact that the process of osteomalacia attacks by predelection spongy bones—for instance, the ethmoid bone (Pommer)—and likewise the fact that not only one portion but the whole nasal skeleton may be attacked. Osteomalacia is an alteration of osseous tissue already formed, with an absorption of calcareous salts, while for some time the fundamental organic substance is unchanged. Moreover, in osteomalacia, the resorption progresses from the center toward the periphery: it begins in the medullary spaces and the Haversian canals and extends toward the exterior of the bone. This is never true in the case of the ozenous process. Cholewa and Cordes say that the alteration in the soft parts is a consequence of the change in the blood due to the ozenous process. They observe that the fatty degeneration of the glandular epithelium considered by some to be specific of ozena and the cause of every case, is met with in other affections of the turbinate bodies, for instance, in hyperplasia. They consider that under certain conditions the nasal mucous membrane reacts in the manner already demonstrated. I now give you the results of my histologic examination of

ozenous tissues taken from cases in different stages of the disease. I have divided the disease into three stages, viz., first, slightly advanced, second, advanced, and third, very advanced cases.

FIRST STAGE (BUT SLIGHTLY ADVANCED).

The epithelium is of variable thickness; at some points it has three or four layers of cells and even ten layers in some places. At other times it exhibits a tendency to hypertrophy with penetration into the tissue, when the layers of cells run up to twenty in number. In some spots the papillæ can be seen against the thickened epithelium. Most of the layers consist of normal epithelium, of cylindrical epithelial cells, either distinctly cylindrical or of a lengthened oval form and superficially placed; we see ciliated epithelial cells among which are scattered calciform cells and mucus.

The cells are arranged with their principal axis of their nuclei perpendicular to the surface. White blood corpuscles are to be seen through these layers on their way to the surface of the epithelium. In traversing the layer of epithelium longitudinally, we can see in places the gradual metamorphosis of cylindrical cells into flat cells. The layers increase in spots; the cilia disappear; the form of the cell changes from oval to circular; the cellular layers are no longer separated but are closely crowded together as if under the influence of a reciprocal pressure.

The cells in the deeper layers where the epithelium is thicker (where there are from fifteen to twenty layers of cells) are cylindrical with their nuclear axis perpendicular to the surface. In the layers midway between the surface and the internal border, the cells take on an ovoid appearance with their nuclear axis oblique to the surface, while in the cells most superficially placed we see irregular forms —flat cells, fusiform cells and vesicular cells, all but slightly colored. At these points, the epithelium assumes an epidermoid character, with a tendency to penetrate into the stroma. The surface is covered with granular detritus in the form of amorphous plates arranged in a haphazzard way and containing chromatin residue. Between the cells

we see many leucocytes in various degrees of degeneration—some even seeming to be proliferating.

The stroma of the mucous membrane consists of formed connective tissue with numerous fibers which in the deeper layers are thicker and arranged like connective tissue fascia. The fixed corpuscles are not very abundant, are large, flat and of a vesicular outline and consist of homogeneous protoplasm. Some have one diameter longer than

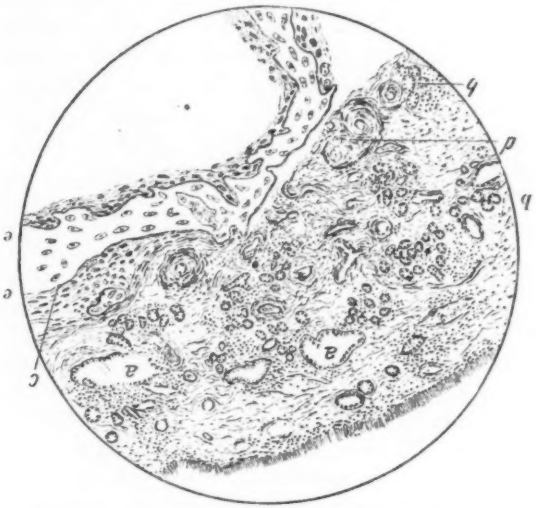

Fig. 1.—Section of right inferior turbinate body in a case of ozena (second stage, Koristka, obj. 2, oc. 3, 16).

a. Dilated glands in the sub-epithelial layers,

b. Acinous glands in the deep layers.

c. Thickened periosteum.

d. Venous cavities in the atrophic cavernous tissue.

e. Osseous substance.

the other and seem to be composed of a rare chromatic tissue. In the adenoid layer, we see a very diffuse infiltration which is very pronounced around the vessels and glands. The infiltration extends along the glandular tubes and is also to be seen in the intertubular tissue especially in the vicinity of the glands adjacent to the periosteum.

The glands present themselves in a variety of forms. In the sub-epithelial tissue, one sees but a

trace of the glands. In spots an extremely dilated gland is seen (Fig. 1, a) which is formed as a result of the fusion of different septa. This fusion is very evident at certain points. These spots are placed upon two or three flattened layers of cells.

They are strongly colored and consist of homogeneous protoplasm. Among these dilated glands we see some which are nearly obliterated and others occluded by the proliferation of the infiltrated glandular epithelial cells. The deep glands which, traversing the cavernous tissue, come in contact with the periosteum, are arranged in clusters (Fig. 1, b) but their orifices are markedly contracted. Their protoplasm is quite uniform, very compact and the plasmosomes are conspicuous by their absence. The protoplasm seems to cover the opening of the gland while on the periphery there is a proliferation of epithelial cells. The intertubular spaces are filled with round cells. The whole cavernous tissue is notably diminished in quantity. The venous sinuses which normally extend through the tissue in great numbers, are diminished in number and size and are surrounded by fibrous bands and bundles of elastic fibers which can be demonstrated by Van Gieson's method of staining. The venous channels are pushed aside by this exuberant growth of fibrous tissue while the walls of the nasal mucous membrane are greatly thickened by this dense fibrous tissue composed of mixed cells and leucocytes. At some places, these venous lacunæ are completely obliterated (Fig. 1, d). The orifice may be contracted in size and filled with blood; some of the orifices are open and some contain many crystals of hematoidin.

The bone is slightly thinner than normal. The periosteum is very much thickened (Fig. 1, c); at certain spots, the layer of osteoblasts is represented by three or four rows of large, flat, mononuclear cells. At other points, on the contrary, we see next to the bone a very thick layer of large fusiform cells (Fig. 2, d). Upon the surface of the bone we see several lacunae of Howslip and osteoclasts. At other points the medullary spaces are very rich in vessels whose walls are greatly infiltrated with white blood corpuscles (Fig. 2, a);. at such points also may be seen numerous products of organization of blood. The osseous

substance is but slightly altered. An infiltration can be made out around the blood vessels which burrow down in the depths of the bone.

Middle Turbinate.—The epithelium is only slightly thickened; the superficial parts are broken here and there. The middle layer of the epithelium is more highly colored than the deeper layers; the superficial parts consists of

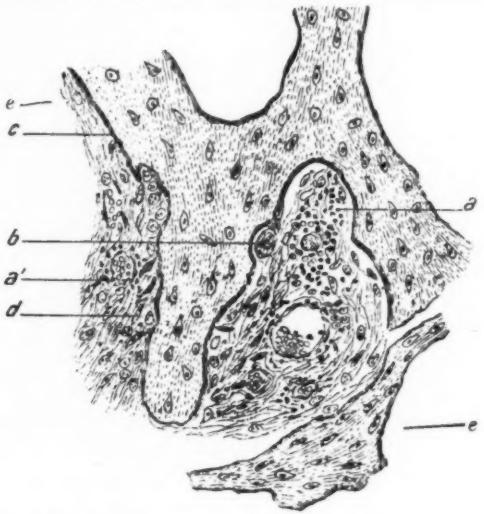

Fig. 2.—Section of osseous trabeculum, from preceding turbinate body (see Fig. 1).

a, a'. Parvicellular and perivascular infiltration in a medullary space and in the periosteum.
b. Osteoblast in a lacuna of Howslip.
c. Osteoid substance.
d. Fusiform periosteal cells.
e. Osseous substance.

swollen and altered cells. In the deepest layers, near the connective tissue stroma there is a rich blood supply; these blood vessels are dilated and tortuous because they contain so much blood; their walls are infiltrated with small round cells. There is also quite an infiltration of white cells in the sub-epithelial tissues, amounting almost to the formation of peri-vascular or peri-grandular vessels. Ordinarily the cells are small, irregular and polynuclear. By appropriate staining we can make out a quantity of

granular cells of immense size. In some preparations the glands are normal but for the most part they are dilated, with flat epithelial cells, no longer cylindrical but cubical, with faintly colored protoplasm and filled with multiple drops of fat. The peripheric outline of the cells is serrated or broken here and there, the connective tissue filling up the gaps in the continuity of this border; this connective tissue is yellow in color. Here and there in the glands we see dense mucus flakes more or less atrophied under the influence of the fixing agents. There are also acinous glands and polylobular glands, the epithelium of which is well preserved.

SECOND STAGE (ADVANCED PERIOD OF THE DISEASE).

Inferior Turbinate.—Tout ensemble, this is a counterpart of the condition just described. In some places the epithelium is well preserved, composed of elongated, uniform cells in close juxtaposition, with finely granular protoplasm. The nuclei are round or ovoid. In other places the epithelium is thickened and presents a metaplasia of the cylindrical cells into pavement epithelial cells; a marked degeneration of these cells can be seen in the superficial parts. Between the epithelial cells are mononuclear and polynuclear corpuscles, the latter predominating. Many of these corpuscles are free upon the surface of the epithelium together with more or less modified red blood cells. The adenoid layer is freely infiltrated with round cells, polynuclear for the most part, well colored and having a homogeneous protoplasm; the nuclei have a chromatic reticulated formation. These masses of cells are gathered about the blood vessels in the superficial portion of the epithelium, while in the deeper portion the connective tissue is dominant, with round cells and fibrous tissue; these round cells follow the course of the grandular tubes. In the stroma of the connective tissue we see many dilated glands (Fig. 3, a) as in the first stage of the disease; in the interior we see here and there granular detritus with round cells. These glands have thin walls, are infiltrated with small cells and lined with cylindrical, wonstratified epithelium having the character of superficial epithelium. Alongside of these dilated glands we see others (Fig. 3, b) in which the epithelium has proliferated

to such a degree that the orifices of the glands are partially or completely occluded. Neither in the deeper nor in the superficial layers can we see glands arranged in clusters. The blood vessels, though not numerous, are filled with blood and have their walls infiltrated with small cells, but the perivascular cells are few and far between. The

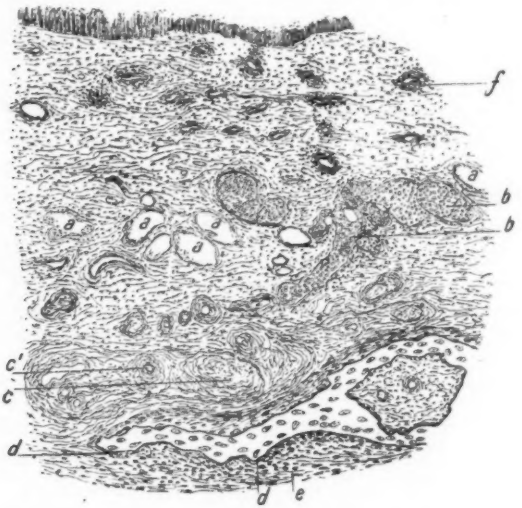

Fig. 3.—Section of the left inferior turbinate body (advanced stage of ozena).

a. Dilated glands.

b. Dilated glands filled up with proliferated epithelial glandular cells, thus occluding glands.

c, *c'*. Atrophic cavernous tissue: the venous sinuses are partly obstructed, partly filled with proliferating endothelium.

d. Osteoblasts.

e. Thickened periosteum.

f Parvicellular infiltration under the epithelium (principally perivascular).

cavernous tissue is still more atrophic than that in the first stage, and there is a very pronounced occlusion of the venous sinuses which are contracted and warped by the growth of elastic fibrous tissue and endothelial proliferation. (Fig. 3, cc).

In comparing a section of the turbinate bone in this condition with a healthy bone, we are struck by the enormous

dilatation of the medullary spaces and the thinning out of the osseous trabeculae which occurs in places to such a degree that a rupture of the partitions actually occurs. The tissue found in the medullary spaces is not like that found in the normal state, but it is filled with a formed fibrous connective tissue with numerous fibroblasts, (Fig. 4) while the myeloplacques and the large cells normally

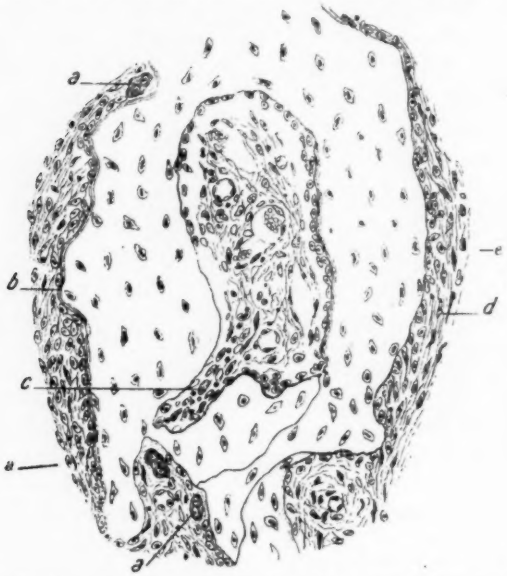

Fig. 4.—Section of osseous trabeculum, from preceding figure (3).
a. Osteoblasts.
b. Osteoid substance.
c. Granular cells (*Mastzellen*).
d. Fusiform cells in the thickened periosteum.
e. Fusiform cells in medullary spaces.

present are rare. In places the layer of osteoblasts is well preserved, uniform and continuous, but in other places it shows a decided proliferation.

The cells are no longer cubical, but are elongated and even fusiform in spots (Fig. 4, d). Near the edge of the bone we see that here and there the continuity is broken by deep cavities of a semielliptic form filled with large polynuclear cells (Fig. 4, a), or with cells resembling osteoblasts. Small capillaries surround these places. The

margin of the bone is serrated and eroded, and it is more highly colored than the rest of the osseous mass (Fig. 3, c, Fig. 4, b). This probably bears some relationship to the resorption of calcareous salts which ordinarily precedes the erosion and disappearance of bone. In the beginning there is a slight proliferation of cells, and again this proliferation of osseous cells is a mark of an attempt on the part of bone to regenerate; this regeneration is never complete, so that in a disease of bone of this kind there is never *restitutio ad integrum*. The vessels in the medullary spaces and in the periosteum are thinner than normal in most cases but may be thickened; the adventitia especially presents a fibrous proliferation. In the midst of the periosteal tissue we see granulations or crystals of hematoidin which are greatly increased in some parts. Granular cells *(Mastzellen)* abound in great numbers. Around the bone at several points we see a notable accumulation of mononuclear and polynuclear round cells disposed around the vessels which are filled with blood.

THIRD STAGE (VERY ADVANCED STAGE OF THE DISEASE).

Inferior Turbinate.—The epithelium is very thin, consisting at the most of but one or two layers of flat cells with decidedly colored elongated, almost fusiform nuclei. These cells are not in intimate contact, but seem to be imbedded in a homogeneous stroma formed by the apparent fusion of these cells. Between the epithelial cells we make out quite a number of small round cells which in certain spots almost conceal the epithelial cells. The epithelium is limited upon its outer surface by a finely granular, amorphous layer of cells. In the sub-epithelial tissue we find very large cells with irregular, vesicular nuclei, refractory to stains with a very rarified chromatic reticulum; the layer just alluded to is not continuous here and is formed of but two or three rows of cells.

The stroma of the mucous membrane is fibrous containing many thick fibers in which we see but a few fixed cells; most of the cells are replaced by mobile corpuscles. Blood vessels are rare; only a few capillaries are to be made out (Fig. 4, b) superficially; in the interior we see numerous perivascular cells of Waldeyer, few of which are normal. Not a trace of a gland can be found. The only

suspicion of the existence of a gland in this place is a clump of proliferated cells here and there which might at one time have been the site of a glandular structure. (Fig. 5, a). By Weigert's stain, we make out numerous cocci and some rare bacilli only on the surface of the epithelium. By Nicolle's method of staining we see the short forms of the bacillus mucosus.

Middle Turbinate.—The superficial epithelium is well-preserved, consisting of from eight to twelve rows of cells; the deep cells are cylindrical or elongated with well-

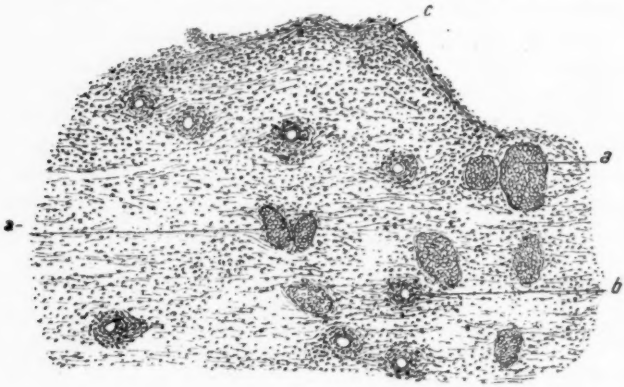

Fig. 5.—Section of atrophic mucosa upon left inferior turbinate body (very advanced stage of ozena).
a. Dilated glands which are occluded.
b. Capillaries with infiltrated walls.
c. Destroyed epithelium and parvicellular infiltration into the stroma.

colored nuclei; the middle layer presents more of a circular form while the superficial layer consists of flat cells. Between the epithelial cells are found white blood corpuscles infiltrating the superficial layers. The stroma of the mucous membrane is limited by the epithelium and shows an enormous vascular dilatation especially of the venous capillaries, with considerable accumulation of red blood cells.

In the course of these histologic examinations it became apparent that in the first two stages the bone becomes thinned out and sensibly eroded by the process of resorption, while the mucous membrane is but slightly changed.

In the third stage it was impossible to cut a single shred of bone, the whole osseous structure having almost completely disappeared, and all that was left was a fragment of mucous membrane. The lacunae of Howslip and the osteoclasts predominated in the second stage but they were also numerous in the first stage and we could make out a trace of vascular absorption at this time. The parvicellular and perivascular infiltration was conspicuous in the first stage when the large *Mastzellen* noted by the German authors were present in great numbers; finally, the presence of hematoidin in the medullary spaces and in the periosteum were signs which demonstrated that the process is accompanied by a slight but progressive inflammation chiefly of the periosteum, but also of the medulla. This was especially noticeable in the first stage. In the advanced stage, there is a condition of chronic atrophic inflammation which obscured the traces of the preceding inflammation. While we could make out very easily when the process was recent by the condition of the bone and periosteum, the parvicellular infiltration of the mucous membrane occurred when the affection had reached an advanced period. The apparently normal cells of the first stage began to desquamate in the second stage; cylindrical cells changed their character to flat cells with their nuclear axis oblique to the superficial parts. The basement membrane, which was normal in the first stage, becomes infiltrated in the second, coincident with a penetration of the masses of leucocytes into the epithelial layers and especially around the sub-epithelial glandular tubules. The epithelium had disappeared by the third stage; one or two rows of cells only are to be seen; the stroma remains unchanged with the exception perhaps of a slight separation from the epithelial layer.

In the first stage the adenoid layer is more or less profoundly infiltrated but nevertheless, here and there are to be seen normal spaces where one recognizes the fine fibrillary tissue which is prolonged down to the beginning of the cavernous tissue. This infiltration becomes more pronounced in the second stage, principally around the capillaries. In a more advanced phase of this period, the mucous membrane is almost uniformly infiltrated. At first the glands which are lined with flat cells appear to be di-

lated, in the superficial portions of the mucous membrane, while in the deeper portions, we see the glands arranged in clusters, lined with cylindrical cells; the intertubular spaces are markedly infiltrated. In the second stage we see the partial or total occlusion of the glandular orifices by the cellular proliferation and there remains not a trace of the cluster-arrangement of these glands as noted above. In the more advanced stage, we see only a trace of isolated obliterated glands.

In the beginning of the disease the vessels are still numerous in the medullary spaces, but are not quite normal in regard to the venous channels commonly observed. The cavernous tissue is visibly atrophic while the sinuses which are normally dilated appear to be contracted and surrounded by bundles of elastic fibers; there is also a thickening of the walls of these sinuses. The adenoid layer contains many capillaries. No trace of the blood vessels is to be made out in the medullary spaces in the second stage; only capillaries are found in the periosteum. The cavernous tissue is poor in vessels and the amount of fibrous tissue has increased to such an extent that the parts appear "stroma-like." In the third stage, we see capillaries only in the mucous membrane and nothing remains of the cavernous tissue.

The periosteum is thickened in the first stage. In some parts we may see the original arrangement of the periosteum in fibrous layers, separated from the bone by proliferation of the osteoblasts, among which we distinguish fusiform cells. Many osteoclasts can be made out here and there in the bone.

The results of my researches have led me to the belief that the process of ozena has its point of beginning in the bone; this explains the tenacity of the affection as seen even when the patient is in the very first stages of the disease. This opinion is in accord with what I have for a long time maintained, i. e., that no case of ozena arises without a favorable individual predisposition, without a favorable substratum. It is a case of individual predisposition, without a favorable substratum. It is a case of individual predisposition, that is to say, a certain morbid state of the originsm which has been designated by the term scrofula; this term is improper, perhaps, but it indi-

cates the whole pathogenesis of the affection in a concise way. This affection, beginning as an atrophy of the medullary blood vessels and especially of the arterial capillaries of the periosteal zone, can easily excite a periosteitis or a rarefying osteitis.

We may here speak of the comparison made by Zuckerkandl, who likens the circulatory system in the nasal mucous membrane to a long tube with a ball midway between the two ends; the artery would represent the afferent vessel, the vein the efferent vessel and the ball would represent the muscular erectile tissue. By means of this comparison we may explain the atrophy of the whole mucous membrane consecutive to proliferation of the periosteum. A part of the arterial capillary system being occluded, the turgescence of the cavernous body would be diminished owing to the fact that the arterial vessels comprise more of the cavernous tissue than the venous vessels (Zuckerkandl).

By degrees the turgescence would diminish, the venous sinuses would atrophy, and a few capillaries alone would keep up the vitality of the nasal mucous membrane. According to Zuckerkandl, the glandular tubules possess a rich capillary blood supply which has for its function the occlusion of the glandular orifice when the gland is in a state of repose; when the supply of blood diminishes, the mechanism of the gland is interfered with, so that the walls relax and secretion goes on with less activity; moreover owing to the loss of nervous activity consequent on the deficiency of circulating blood to nourish the parts, the chemical composition of the secretion of these glands is altered, so that instead of having a neutral or slightly alkaline reaction, as it normally has, it now has an excessively alkaline reaction.

Dilatation of the nasal fossa increases the evaporation of moisture from the nasal mucous membrane; the current of air is decreased in velocity; there is a relaxation in the intensity of the respiratory variations of the intra-nasal aerial pressure, which normally gives an important accessory impulse to the blood circulating through the nasal mucosa (Sänger); thus the circulation of the blood in the nasal mucous membrane is retarded.

Because of the fertility of the parts in leucocytes,

because of the alkaline nature of the fluid secreted, because of the destruction of the ciliated epithelium, the secretion which is poured out, under the influence of increased evaporation, becomes stagnant in contact with the nasal mucosa and furnishes an ideal soil for the growth of bacteria. This soil is especially conducive to the growth of the bacillus mucosus, which, by its viscid and adhesive nature, gives the special characteristic to the ozenous crusts of detaching themselves almost spontaneously; at the same time, the growth of this bacillus or the conjoint growth of others, gives the nauseating odor to this process. It is but natural to see how the fermentation which takes place under these conditions is capable of producing by its irritation an infiltration of all the tissues of the mucosa; this explains the progressive infiltration of the sub-epithelial structures which occurs simultaneously with the development of the disease.

We can also attribute to this irritation the fact that we often find hypertrophic zones in the inferior turbinate instead of atrophic zones; thus we see even a polypoid hypertrophy of the middle turbinate of the same side as the ozena. While my observations confirm his in this respect, I cannot agree with his theory of the etiology of this affection; my theory is based on both histologic examinations and clinical findings. Ozena is neither a consequence of other affections, nor is it a rhinitis; in fact, we find in an advanced period of the disease, a practically normal mucous membrane or epithelium upon the inferior turbinate body—the site of predeliction of this affection, while the bone is greatly eroded, the periosteum proliferating, etc. The middle turbinate is rarely the site of atrophy and this clinical finding is in perfect accord with the embryology of the parts; the inferior turbinate has its origin from a process of the superior maxilla while the middle turbinate arises from the ethmoid bone.

From my clinical and histologic investigations I am confirmed in the belief that the veritable essence of ozena resides in the bone and not in the mucous membrane. The affection is rebellious to both antiseptic treatment and to curettage. The bacillus mucosus while not regarded by me as a specific micro-organism of the disease, is nevertheless met with in nearly all the cases where ozenous

crusts are present. That ozena is not an essentially infectious disease is proved by the fact that in spite of the epithelial desquamation, no trace of a micro-organism can be found in the tissues either in the beginning or in an advanced stage of the affection. The histologic communication of Drs. Belfanti and del la Vedova, that a pseudo-diphtheria bacillus has been separated from ozenous tissues has been contradicted by many writers, among whom we may name Lautman (Annales des mal. de l'oreille, etc., March, 1897), who says, that he has but little confidence in the methods of these two investigators. Lautman affirmed that they found the bacillus in the mucous membrane, and not in the ozenous turbinate bodies. His examinations of the ozenous turbinate bodies, like mine, were without results.

My conclusion is, that the bacillus mucosus is the etiologic factor in the production of two of the most disagreeable *symptoms* of ozena, viz., fetidity and crusts, but it is by no means to be classed as the specific etiologic agent of ozena, as I maintained in the discussion of the bacteriologic etiology of ozena at the International Congress of Otology in Bale, in 1884. The etiology of the bone atrophy and, in consequence, of the mucosa also, can be found in a nutritive alteration of the tissues of the turbinate bodies or of one turbinate body. This change begins in the bone and is often associated with a congenital, general, systemic disorder. I wish to emphasize the fact that the ozenous patient is born *ozenous;* that is to say, the child which afterwards suffers with the full manifestations of the ozenous affection comes into the world with a special predisposition for these nutritive changes, which determine an erosion of the bone and its ultimate destruction, and an atrophy of the mucosa of the turbinate bodies.

LARYNGEAL CHOREA (?) OF REFLEX NASAL ORIGIN. REPORT OF A CASE.*

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The case I am about to report is one of that peculiar unique type which is puzzling and frequently a source of embarrassing annoyance, because of its obstinancy in yielding to treatment. It is presented for your consideration not only for this but also for the reason that we are liable to find a cause for some of the most obstinate diseases with which we have to deal, where we least expect or suspect it. Pathology has shed little light on the possible cause of reflex nasal troubles, and the clinical phenomena are so numerous and deceptive, furnishing only a number of hypotheses and theories.

I think this case may correctly be reported as one of laryngeal chorea, because there were, in addition to other marked hysteric and nervous disturbances, some choreic twitchings. The characteristic symptoms, we are taught, is the "spasmodic barking cough," which disappears entirely when the patient sleeps. In this case the cough was worse at night, and instead of sounding like the ordinary bark of a dog was more like the yelp of a hound pup, which made the patient a nuisance and source of embarrassment to herself and to every one within hearing distance.

Following is a brief history of the case:

Miss ——, aet. 23. Fairly well nourished, intelligent woman, of distinctly neurotic type. Menstruated when twelve years of age. This function remained normal for five years. At the end of this time her health became

*Read at the Eastern Section American Laryngological, Rhinological and Otological Society held in Washington, D.C., February, 1899.

impaired (called general debility) and menstruation did not return for three months. Had a convulsion while in class at school, which was followed by scant menstrual flow. For several years from this time she was an invalid, suffering for days with dysmenorrhea at irregular intervals.

A gynecologist dilated the cervix uteri, but gave only temporary relief—later on both ovaries were removed. This stopped the dysmenorrhea but left her a physical wreck. An operation was performed for the relief of vesical calculi, and six months later large hemorrhoids were removed. During this period of five and a half years, she had been under the care of twelve physicians and gynecologists, and from the number of operations performed, I concluded that everything within the abdominal and pelvic cavity, had been removed that could be, with any safety to life.

At time of consulting me (May, 1898) she says she has been troubled with a peculiar barking cough for four or five years, sometimes losing her voice entirely, for days. At first the cough only lasted a few days and was not of enough consequence to demand treatment. This has gradually increased, until for the past few months it has been most persistent, the convulsive seizures being more frequent and prolonged in duration. One peculiarity is very noticeable, in this differing from a true chorea—viz.: sleep does not prevent the cough unless produced by a full dose of morphine. Also the recumbent position aggravates the trouble. She has been subject to "head colds" and "sore nose," since childhood, but nothing was thought of it and no especial attention given to it.

She complains of little tickling and some soreness in the throat, and she is easily fatigued by talking. Examination revealed marked hypertrophy of both inferior turbinates extending from "tip to tip" (anteriorly and posteriorly), more marked anteriorly. There was little stenosis or obstruction to respiration on account of large roomy nasal passages. The pharynx and arytenoids presented a congested granular condition, evidently due to irritation produced by constant coughing. and disease in nasal cavities. The ventricular bands were thickened, chordæ vocales hyperemic, and in attempts at phonation were

driven forcibly toward the median line by spasmodic action of the adductors.

The case being one of peculiar interest, and markedly neurasthenic, no local treatment was employed, and a modified "rest cure" was begun, assisted by tonics, massage and hypnotics. At the end of three weeks this treatment had accomplished nothing, save in improving the general condition. The cough not only had "gotten no better fast" but was worse, being aggravated by the continued recumbent position. Things were getting desperate, as the hoarse yelping cough was not only distracting the patient, but every body else within hearing distance. Just at this stage she was taken with a violent attack of acute rhinitis, in which the turbinals became so swollen as to block the passages completely. For relief of this I applied a ten per cent. solution of cocain and much to the surprise and delight of myself, my patient, and the long suffering nurses, the cocain not only relieved the nasal discomfort but stopped the cough as long as the effect lasted.

Encouraged by this, chromic acid crystals (fused on probe) were applied thoroughly to both inferior turbinals throughout the entire length. There was immediate cessation of the cough, and the neurotic symptoms began to disappear. In two weeks from date of first application, a second was made. The patient remains entirely relieved and her general health better than since childhood.

REPORT OF A CASE OF ACUTE, PURULENT ENDO-MASTOIDITIS DEVELOPED IN THE COURSE OF A CHRONIC OTORRHEA; FOLLOWED BY AN EXTRA-DURAL ABSCESS WITH SLOUGHING OF THE DURA MATER—METASTATIC ABSCESS OF LUNG WITH SPONTANEOUS EVACUATION OF THE CAVITY—RECOVERY.*

P. M. PAYNE, M. D.

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On December 9th, 1897, a Spanish cabin boy A. L., age sixteen years, was brought to the office of Dr. A. W. De Roaldes, with a temperature of one hundred and six degrees, and a history of chronic suppuration of the middle ear, (left side) recurrent acute otorrhea lasting over a period of eight years. Two years ago in one of these attacks patient was threatened with mastoid complications. External examination showed no swelling, no redness nor was there any appreciable pain except on pressure over the mastoid region. Otoscopic examination showed the canal to be free from all acute inflammation. Chill and dizziness were complained of during the examination.

Notwithstanding the almost complete absence of external mastoid signs, the diagnosis was made of acute purulent endo-mastoiditis with probable cholesteatomatous masses obstructing the additus ad antrum. Drum was extensively destroyed and middle ear partly disorganized, showing comparatively very little discharge, in fact only a moist condition rather than a purulent accumulation;

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there was however considerable odor. Probe revealed necrosis of tympanic cavity, and the hearing was almost destroyed in that ear. Operation was declared urgent and patient sent at once to the New Orleans sanitarium.

The next day, the parts having been well prepared, a Schwartze's operation was performed by Dr. Augustus McShane in the presence and under direction of Dr. De Roaldes.

Communication with the middle ear was secured after removal of granulating tissue and caseous foul-smelling epithelial masses. Wound was now irrigated and packed with iodoform gauze and patient put to bed. Slight chill on following morning, (eleventh) maximum temperature of the day being 101 1-5°.

December 12th.—Temperature 102°. Reference to temperature chart shows irregular daily rise and fall of temperature, and on the 13th, three days after operation, it was 103 3-5° F.

December 13th.—Dressing was ordered removed, wound irrigated, peroxide freely used and nurse instructed to renew same at night as considerable pus was found in canal and antrum. Dressing ordered changed twice daily. He complained of pain in left side of chest.

December 15th.—Patient was seen in consultation with Dr. R. Matas, who after discussing the indication of another intervention, agreed in the main line of the treatment.

December 17th.—For the last four days he has continued to suffer from septic rigors followed by rise of temperature during which spells he experiences a sharp and well localized pain in chest with troublesome cough, these symptoms abating during the period of febrile remission. Meanwhile suppuration continued to be foul and so abundant that an extensive Stacke's operation was done, with an exploration in the direction of the lateral sinus, although there were no marked signs of a thrombosis. After curetting vigorously the large cavity resulting from a radical Stacke's, it was found that there existed granulation tissue between the two plates of bone in the rear of the antrum, and in the direction of the lateral sinus. In following this granulation tissue considerable necrosed bone was found and chiseled out, and finally the sinus was

exposed, and a large quantity of very offensive pus was evacuated from an extensive extra-dural abscess, the pus having found its way from the cavity of the abscess between the tables of the skull through a fistulous opening in the inner table. The exposed lateral sinus was found pulsating and otherwise unaffected.

December 19th.—Notwithstanding this intervention septic symptoms continued to be manifested by frequent rigors and rises of temperature with an occasional subnormal registration. Patient complained to-day of pain and swelling in anterior temporal region.

December 22nd.—A large abscess starting from the last mentioned region was opened midway between the ear, and the eye, and found to correspond to a purulent cavity extending under and below the zygomatic arch, the bone of the temporal fossa being denuded and rough. Anterior and posterior wounds were made to communicate by drainage tube.

December 27th.—The condition of patient is very little changed and he has become very pale, very weak and very much emaciated. Notwithstanding all efforts at careful drainage and thorough disinfection the wound continued to show an unhealthy action and to discharge foul-smelling pus.

The means of the patient having been exhausted he was removed to the Eye, Ear, Nose and Throat Hospital where he continued to be attended to by the writer. On the night of this transfer, although carefully executed by two of the resident surgeons in a closed carriage, patient gradually grew very weak, considerably depressed and somnolent. At 8 P. M. thermometer registered 96 2-5°, with a pulse of sixty-four. These distressing symptoms were properly met with by alcoholic stimulants, digiti in ,strychnin and warming of the extremities.

December 28th.—A thorough investigation was made; minute examination of chest and mediastinum gave no positive information as to the exact location of the abscess from which this bad smelling pus was being coughed up daily, especially during the rise of temperature, the only appreciable auscultatory symptom being a prolonged expiration in the left supraspinous fossa. The doses of 'creosote et morrhuol' which had been administered from the

beginning were increased and patient highly nourished every few hours.

December 29th.—At 8 A. M., he had a very severe chill followed by a temperature of 106°, with a return to normal at 10 A. M. At 2:30 P. M. he had another chill with temperature not so high as morning, but he complains of severe pain just below left nipple. At night, wound was dressed, the gauze being saturated with usual foul-smelling pus. Deeply imbedded in the posterior wound a mass was observed to pulsate and apparently increase in volume. On removal with forceps and close examination it was found to be a slough of the dura mater presenting on one side some of its characteristic appearances, viz: a white, smooth, glistening densely fibrous surface excepting certain spots which were of a darker color and evidently necrosed. The other surface presenting a fungating mass of sloughing tissue partially covered by foul-smelling purulent discharge. Thorough irrigation resulted in the expulsion of much fetid pus from region of lateral sinus.

December 30th—With the exception of light chill patient seemed a little better, as he has failed to-day to cough up his usual fetid expectoration, and the appearance of the posterior wound was much improved and discharge very much lessened.

December 31st.—Patient was seen to-day by Dr. Ernest Laplace of Philadelphia, who suggested the withdrawal of drainage tube in front part of wound, change of antiseptic lotion with the very best and most highly nutritious diet, expressing in a general way a hopeful view of a final recovery.

January 1st. 1898.—All drainage tubes having been removed and strips of iodoform gauze substituted, the patient who had for thirty-six hours previous been free from all cough, expectoration and fever was seized with another rigor sending the thermometer to 104° F. This last paroxysm was accompanied by vomiting and severe abdominal pains presumably caused by overfeeding. These symptoms were quickly relieved by an evacuation of the bowels by enema. Temperature and pulse were normal at midnight. This was the last febrile manifestation. From this time all wounds assumed a healthy cicatrizing action and patient proceeded rapidly towards recovery.

January 27th.—Patient was discharged from indoor department, and for some time continued to attend the outdoor clinic. Before sailing his hearing was carefully tested, and was as follows:

March 4th, 1898,	R. E.	L. E.
Watch	40 in., - -	5 in.,
R. T.	(plus) + 35 -	12
L. V.	20 - - -	18
Whisper	20 - - -	10

Weber St. Test. Lateralized in left ear.

I read letter from the patient written from Liverpool, March 30th, acknowledging himself in perfect state of general health with complete recovery of local affection.

THE TECHNIC OF LARYNGECTOMY.*

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The operation advised by the author, is as follows:

1. The general preparation of the patient is the same as for any other operation.

2. As in all cases about the mouth, nose, pharynx and larynx, he is particularly careful to make a systematic attempt for two or three days beforehand to secure at least partial disinfection. While partial disinfection is not as good as complete, yet the results in the treatment of fractures of the base of the skull, in the extirpation of rectal tumors, etc., shows its great value. The teeth are very carefully cleansed with the tooth brush. If there are any old stumps of teeth present, it is better that they be extracted, and the operation deferred a few days until these wounds heal. For two or three days before the operation, every two hours, when the patient is awake, the mouth and each nostril should be sprayed with a solution of boracic acid, listerine, or both.

3. Nearly all authors recommend a tracheotomy either as the first step of the operation, or more frequently 10 to 14 days before the operation. In the few cases in which dyspnea is great, he should be disposed to do a tracheotomy, say two weeks before the laryngectomy, not, however, with a view of preventing the entrance of blood and wound fluids into the lungs by the introduction of a tampon canula, but for the purpose of improving the general condition of the patient. In the case which is the basis of this article, he did a tracheotomy at the time of the operation, but removed the tracheal tube at the termination of the laryngectomy, immediately closed the wound in the trachea, and obtained absolutely primary union. In any future case, he is strongly of the opinion that it would be better to omit tracheotomy entirely. It was not in his

*Abstracted by W. Scheppegrell, M. D., New Orleans, La.

opinion needful, and by omitting it we would eliminate one cause of septic pneumonia.

4. The entire operation, after the trachea is invaded, is done with the patient in the Trendelenburg position. He is quite persuaded that the majority of surgeons do not appreciate to its full the advantages which this posture possesses in all operations about the upper air-passages. As he stated in a previous paper, he employs it in epithelioma of the lip, in extirpation or other operation on the upper and lower jaw, in removal of the tongue, in cleft palate, in operations on the tonsils, and pharynx, and all similar operations. Blood will not run uphill any more than water, hence, if we employ this posture in laryngectomy, we would avoid one of the chief reasons for tracheotomy and the employment of a tampon canula.

The disadvantages of tampon canulae are very great. Kocher, as also the author, has lately dispensed with them entirely. The three most commonly used are those of Trendelenburg, Hahn and Gerster. Of the three, Gerster's is distinctly, in his opinion, the best. It can be more accurately adapted to larynges of varying sizes, and is much less likely to injure the parts either by undue pressure or by difficulty of introduction. In one case, in his attempts to introduce a Hahn canula, the rings of the trachea were considerably torn. The objections to Trendelenburg's canula are: arrest of respiration, which sometimes follows its introduction, the production of pressure gangrene in the trachea, obstruction in the lower end of the tube by the rubber ballooning into the trachea beneath it, the bursting of the rubber or its being cut, and if none of these mishaps occur, the air often gradually escapes and thus renders it useless.

The Hahn canula cannot be made aseptic as easily as others, and, as Lennox Browne has pointed out, it sometimes requires 20 minutes for the expansion of the sponge after its introduction.

5. Anesthesia is at first done through the mouth, and is so continued until the larynx or trachea is invaded. A large tracheotomy canula (12 millimeters in diameter) is then introduced and held in place by disinfected tapes tied around the neck. The inner tube of this canula is removed and the metal tube of a Hahn canula, which precisely fits

it, introduced. A rubber tube connects this with the ordinary funnel for the administration of chloroform.

6. The operation proper, the author described in connection with the case reported, and then indicated the improvement in technic which he purposed adopting in the next case he might have.

7. The after-treatment: (1) Posture; the patient is kept in the Trendelenburg position by placing a chair under the foot of the bed. This position prevents any wound fluids from running down (or rather up) into the lung. This position is to be maintained for a day. On the second day the bed is lowered to the horizontal plane; on the third, he is allowed to sit up in bed on a bed-rest; on the fourth, to get out of bed and sit in a reclining chair, and on the fifth day he may walk about the room.

(2.) Food: For two days nutritive enemata only are to be used. After that a teaspoonful of liquid food is given, at first every half-hour always followed by a tablespoonful of sterile water to wash away any food that might possibly leak into the laryngeal wound. At the end of a week, full diet as to quantity may be given, but no solid food until the tenth day. A catheter or esophageal tube is not required. In his case, the patient could swallow from the first.

(3.) Dressing: The primary dressing was described in connection with the case. On the day after the operation the small gauze drain should be removed. Half of the stitches may be taken out on the fourth day, and the remainder on the sixth day. In the case reported, the temperature on the day after the operation rose to 101.8 F., and fluctuated between the normal and 101 for a week, when it fell to the normal.

8. The only objection to this method which occurred to the author, is that it absolutely precludes the use of any artificial larynx. The possession of voice is nothing when compared with a speedy recovery and a greatly diminished danger of a fatal result. Rutsch believes such a larynx is very unsatisfactory. The author realizes the fact that one case does not prove the value of any method, but its advantages were so striking in this case that, as laryngectomy is a relatively rare operation, he has not thought it best to wait until he could accumulate a much larger

experience before bringing it to the attention of the profession.

9. As to the final results, it is too early to draw any inference as to the possibility of recurrence in this particular case, nor is this his purpose. His intention is rather to demonstrate a method of laryngectomy which would diminish more especially the immediate mortality of the operation, and secure speedy recovery by primary union. The chances of recurrence are no greater, nor yet any less, after operation by this method than by any other. This particular patient has been able to go out in all weathers during the past extremely severe winter, though living as far north as Waterville, Me., where the thermometer has been many degrees below zero.

ABSTRACTS FROM CURRENT OTOLOGICAL, RHINOLOGICAL AND LARYNGOLOGICAL LITERATURE.

I.—EAR.

Cerebellar Abscess of Otitic Origin.—Autopsy.

McConachie and Hartwig. (*Journ. Amer. Med. Assn.*, April 8, 1899.) The diagnosis of cerebellar abscess must be founded upon the complexity of the symptoms, viz., severe headache, nausea, vomiting, vertigo, a staggering gait, facial paralysis, choked discs with retinitis, slow pulse, temperature low, slowing of the respiration, Cheyne-Stokes' respiration, yawning, slowness of cerebration and general apathy, irritability, intolerence to light, delirium, rigidity of the neck, motor and sensory paralysis.

When complications exist, as sinus thrombosis and leptomeningitis, other symptoms supervene to make the diagnosis difficult. In sinus thrombosis, rigors and chills with high temperature and increased heart action are almost invariably present, with tenderness along the course of the jugular vein. In leptomeningitis, there are high temperature, rapid pulse, general irritability and marked acuteness of special senses.

A cerebellar abscess usually terminates in death when operative procedures are not used. The abscess contents escape and a new inflammatory action is set up. Abscesses have become encapsulated and remained quiescent for years without giving rise to serious trouble, but such cases are rare. We should never anticipate such a result. Our duty is to operate early if a successful result is to be hoped for. The time to operate is when we have made our differential diagnosis—a deep problem and sometimes a very speculative one. *Scheppegrell.*

Drumhead Perforations, Their Site and Significance.

Potts, B. H. and Randall, B. A. (*Jour. Amer. Med. Assn.*, March 4, 1899.) The authors give the result of a

study of 1000 cases from private and clinical record books. The findings are conflicting with those of Moos and other writers, in that the large proportion of perforations was found in the lower posterior quadrant. The statistics of actual perforations from private records, with their larger proportion of acute cases, have as large a per cent. in the upper and posterior quadrant (38 per cent.), which is 16.4 per cent. of the whole number.

As regards the Shrapnell region above the short process, the presence here of a discharging opening in the flaccid membrane in 10 per cent. of the cases fully accords with what has been urged as to the dry pin hole "foramen of Rivinus" at this point, which has been found in 25 per cent. of adults, although never seen in early life. Bad as are the severe cases of attic and antrum disease with perforations at these points, there is no sense in including under their ill-repute the many cases which are of no exceptional severity and in no need of radical treatment by operation.

The anterior-inferior perforation, commonly stated to be the most usual, appears in but 25 per cent. of the cases. The authors take a very conservative view of the perforation of Shrapnell's membrane. When one sees such cases by the hundred and secures more satisfactory results without operation than reliable men gain from their ossicular incisions, it is easy to see that more room yet remains for conservative and thorough-going treatment. *Scheppegrell.*

Mastoid Complications of the Exanthemata of Children.

DENCH, E. B. (*Pediatrics*, Vol. VII, No. 12, 1899.) The two diseases in which aural complications are most frequent are measles and scarlet fever. In the former disease, the complication is often of a mild character, yielding readily to treatment, whereas in the latter it is not only extremely common, but progresses with great rapidity, and extension of the inflammatory process to the mastoid can be prevented only by the most radical measures in the early stage of middle ear inflammation.

Where post-auricular abscess develops, simple incisions through the soft part is not sufficient. Even in young children the mastoid antrum should be entered in every

instance, as the cranial bones are very thin and infection of the intra cranial structures may occur through the external surfaces of the temporal bone, as well as through the tympanic roof or through the posterior wall of the mastoid antrum. *Scheppegrell.*

Fifty-One Mastoid Cases.

GREENE, D. M. (*Journ. Amer. Med. Assn.*, May 20, 1899.) An interesting synopsis of 50 operations, including four brain abscesses and one perforation of the sigmoid sinus. *Scheppegrell.*

Acute Inflammation of the Tympanic Cavity.

SMITH, S. M. (*Phil. Med. Journal*, May 6, 1899.) The most common cause is extension by continuity of a catarrhal inflammation from the throat or nasopharynx. Treatment of these parts should therefore not be neglected. The various degrees of inflammation are then outlined, and their respective treatment described. *Scheppegrell,*

A Modified Siegle's Pneumatic Aural Speculum.

BURNETT, CHAS. H. (*Journ. Amer. Med. Assn.*, June 3, 1899.) This instrument is practically a Gruber speculum made of metal, to which is fitted a glazed lid that transforms it into the Siegle pneumatic speculum. It is nickel-plated both within and without. There are two small openings on its inner wall, at the point connecting it with the air tube, which act as a sieve to prevent the drawing up of particles of cerumen or dirt into the mouth of the operator. *Scheppegrell.*

Syphilitic Perichondritis of the Auricle

PACKARD, F. R. (*Phil. Med. Journal*, June 24, 1899.) Perichondritis auriculae of syphilitic origin is quite rare, as literature on this subject shows but few cases. The case reported was that of a negro of 25 years, who presented all the typical symptoms and who was promptly cured under specific treatment. *Scheppegrell.*

A New and Successful Treatment for Certain Forms of Headache, Deafness and Tinnitus Aurium.

VANSANT, E. L. (*Journ. Amer. Med. Assn.*, June 24, 1899.) The clinical notes of 18 cases from the basis of a report which show the remarkably prompt and prominent result from the simple expedient of syringing the nasal

accessory sinuses and the Eustachian tube with a stream of dry hot air under pressure. The relief in many cases was immediate, and headaches of a month's duration were relieved after a single treatment of a few minutes with hot air.

The effect of injections of dry hot air into the middle ear, for the relief of tinnitus and the improvement of the hearing was very marked. Better results were obtained in cases where catarrhal rather than sclerotic changes were present in the middle ear and Eustachian tube. The instrument used in these cases is like that employed by the dentist for a similar purpose. *Scheppegrell.*

Mastoiditis, Diagnosis and Treatment.

DAVIDSON, JNO. P. (*Journal Amer. Med. Assn.*, July 15, 1899.) A synopsis of the diagnosis and treatment of mastoid inflammation. Hot applications, leeches and Wild's incision are condemned. *Scheppegrell.*

Catheter Inflation of the Tympanum; Its Value and Technique.

RANDALL, B. A. (*Journ. Amer. Med. Assn.*, May 27, 1899.) A careful description of the technic and advantages of this valuable procedure. *Scheppegrell.*

Deaf-Mutes, with Clinic.

STAPLER, M. M. (*Jour. Amer. Med. Assn.*, May 27, 1899.) The author believes that he has obtained good results by cauterizing the fibres of the tensor palati muscles which preside over the opening of the Eustachian tube. *Scheppegrell.*

Hydrochloric Acid Application to the Bony Walls of the Tympanic Cavity and Meatus.

ARD. (*Journ. Amer. Med. Assn.*, July 22, 1899.) This remedy was first proposed by Dr. Bull, of Christina. He believes that the treatment is not indicated if the ossicles are diseased. When dead bone is visible, he applies cotton soaked in the acid, four per cent., and leaves it in contact. In a cavity, he introduces the cotton into it, removing it the next day, these applications being made a week apart. The acid gradually decalcifies the affected bone and acts like curettage. It is a strong antiseptic and cured from one-third to one-half of all cases treated. *Scheppegrell.*

The Pathology of Catarrhal Deafness.

HINKEL, F. W. (*Phil. Med. Journal*, July 15, 1899.) The hypertrophic form of middle-ear disease is responsible for a large percentage of cases of chronic catarrhal deafness. Early treatment is generally successful. Proper attention to throat affections in childhood will usually prevent these complications. *Scheppegrell.*

Closing Perforated Ear Drums.

PELTESOHN. (*Journ. Amer. Med. Assn.*, July 22, 1899.) A description of the method of Okuneff in applying trichloracetic acid to the margin of the perforation.

Scheppegrell

Chronic Middle-Ear Suppuration, with Permanent Retro-Auricular Opening; Radical Operation.

GLEASON, E. B. (*Journ. Amer. Med. Assn.*, June 10, 1899.) The case reported was complicated by permanent retro-auricular opening. A radical operation was performed and the antrum found packed with cholesteatomatous material. *Scheppegrell.*

Affections of the External Ear.

RANDALL, B. A. (*Journ. Amer. Med. Assn.*, March 4, 1899.) External affections make up 25 per cent. of all ear diseases, one-half of this number consisting of impacted cerumen—about 14 per cent. Of the remainder, diffused inflammation of the auricle and canal, which may be called eczematous, makes up about five per cent., and furunculosis two per cent., leaving for remaining diseases about four per cent. *Scheppegrell.*

Suppurative Disease of the Ear; The Presence of Polypi and Granulations Therein not an Unfavorable Indication.

LAUTENBACH, L. J. (*Journ. Amer. Med. Assn.*, March 4, 1899.) It is not intended to infer that in every case of polypoid complication the results are better than in those where neoplasms do not exist. Yet the average amount of benefit derived in the latter class of cases is much greater than in the former. Granulations form an evidence of the activity of the inflammatory action in a benign manner and exhibit an effort of nature to extend her healing processes to as great a measure as possible. They allow the retention of necessary vascularity, the nerve innervation remaining, until such time as through

artificial or natural means everything is ready for a quick healing, and all we need is to take advantage of nature's open door. *Scheppegrell.*

Adenoid Growths, Their Relation to Deaf-Mutism.

GETCHELL, A. C. (*Journ. Amer. Med. Assn.*, March 4, 1899.) In three cases of deaf-mutes operated upon, there was improvement in the hearing of the first, but not in the other two. Adenoid growths and enlarged tonsils should be removed from deaf-mutes if there is any probability that they contribute to the deafness, if they make more difficult the acquirement of spoken language by the oral method, and to improve the general health of the child.

Scheppegrell.

Necessity of Early Recognition and Treatment of Non-Exudative Inflammation of the Middle Ear.

PILGRIM, M. F. (*Phil. Med. Journal*, March 11, 1899.) The author begins his article with an excellent criticism of the methods of patients who call on the aurist during the interim of a short visit to the city, and expect to be cured by some magic process of an affection of 20 years' standing before their return home.

In non-exudative inflammation of the middle ear, he has had good results from treatment with aural massage, and believes that it should be given a fair trial. He very properly objects to the criticisms of aurists who have never given the method a trial and who are therefore not competent to judge of its merits. *Scheppegrell.*

Chronic Catarrhal Otitis; Treatment by Oto-Massage.

DUFOUR, C. R. (*Jour. Amer. Med. Assn.*, April 15, 1899.) The author has had good results from the use of oto-massage, especially with the electric pneumo-masseur. Two or three applications should be made weekly.

Scheppegrell.

Sarcoma of the Middle Ear.

BROSE, Evansville, Ind. (*Archives of Otology*, Vol. XXVIII, Nos. 2 and 3.) A girl, aged 3 1-2, seven months before coming under the author's observation first complained of earache. Two months later she again had earache which this time was followed by a discharge. A few weeks later the mother detected in the right ear a

small reddish growth which slowly became larger. A fetid discharge filled the auditory canal and the supposed polyp was removed with a snare. After the growth had returned and had been removed a number of times, there was observed an enlargement over the mastoid which rapidly increased in size. This swelling had a soft doughy consistence, there was no redness and it was not painful on pressure. Operation was advised and undertaken. The soft reddish-gray fleshy mass over the mastoid was removed by the sharp curette. The outer table of the mastoid was eroded and with the curette the antrum was freely exposed. The external ear polyp on microscopic examination proved to be a small round and spindle-cell sarcoma. Recurrence again speedily took place and the child died in convulsions about nine months from the date of the primary earache. *Campbell.*

A Contribution to the Statistics of the Dangerous Complication of Suppurative Ear Diseases and of Operation on the Mastoid Process.

TEICHMANN, Berlin. (*Archives of Otology*, Vol. XXVIII, Nos. 2 and 3.) Of 1750 cases more than half (56.6 per cent.) belong to the periods 6 to 30 years while 71.8 per cent. belong to the years 0 to 30. According to the returns three-quarters of the dangerous complications follow chronic purulent otitis and only one-quarter the acute. The suppuration in influenza-otitis almost always runs an acute course up to the inception of the dangerous complication, while in the otitis of scrofula, tuberculosis, diphtheria and measles, it runs a chronic course.

Campbell.

Influence of Sea Climate and of Surf Bathing on Aural Affections and Hyperplasia of the Pharyngeal Tonsil.

KÖRNER, Rostock. (*Archives of Otology*, Vol. XXVIII, Nos. 2 and 3.) The author's opportunities were not sufficiently great to form conclusions of any value.

13 children with very large hyperplasia of the pharyngeal tonsil gained 1778 grms.

15 " a " " " " " 2142 "
18 " a moderate " " " " 1741 "
98 " without any " " " " 2183 "

Campbell.

The Magnifier in Otoscopy.

BOENNINGHAUS, Breslau. (*Archives of Otology*, Vol. XXVIII, Nos. 2 and 3.) Its advantages are, enlargement of the image of the tympanic membrane, stronger illumination of the same, generally and especially of its extreme edges (prismatic effect) and bringing out more clearly the dimention of depth.

The lens the author uses has a focal distance of $7\frac{1}{2}$ cm., that is of 13 dioptrics, which, when using the reflector, produces a magnification of about $2\frac{1}{2}$ times. *Campbell.*

Intestinal Disturbances Produced by Otitis Media of Infants.

HARTMANN, Berlin. (*Archives of Otology*, Vol. XXVIII, Nos. 2 and 3.) From recorded observations the author deduces the following:

1. Acute febrile otitis causes a diminution in weight or arrest of increase in weight.

2. Otitis accompanied by grave septic symptoms probably causes diarrhea.

3. An acute febrile otitis occurring during intestinal diseases may act upon the general constitution, and by reducing the vitality, aggravate the intestinal affection, or retard recovery.

4. Whether there is a direct relation between atrophy and an otitis, must be reserved for further observations.

Campbell.

Percussion of the Mastoid Process.

EULENSTEIN, Frankfurt. (*Archives of Otology*, Vol. XXVIII, Nos. 2 and 3.) The author in 1894 published the results of the examination of ten cases of acute disease of the mastoid, in which he arrived at the following conclusions:

I. By means of percussion (compared with that of the other side) a positive diagnosis of a diseased condition of the mastoid can be made—provided dullness is elicited.

II. Dullness on percussion indicates the presence of a diseased area near the surface of the bone, the degree of dullness depending upon the extent of the area involved.

III. The absence of dullness is no proof that the bone is not diseased.

IV. Where other symptoms of mastoid disease are present and there is no dullness on percussion it indicates

that the diseased area is either very small or deep seated.

In this paper, he gives the histories of ten more cases, which support his earlier conclusions, and he states, that by percussion, we are enabled to recognize mastoid disease earlier, and that it is a valuable adjunct to the indications for opening the mastoid. *Campbell.*

Two Cases of Otitic Sinus Thrombosis.

KNAPP, New York. (*Archives of Otology*, Vol. XXVIII, Nos. 2 and 3.) CASE 1. A girl, aged ten, with a history of intermittent otorrhea since her first year. She complains of pain in the left ear, forehead and occiput, has vomited and had a shaking chill followed by fever. There is hyperesthesia of the skin and she is constipated.

Mastoid on both sides appears normal, free from redness, the left slightly larger than the right.

Fetid pus comes from the left ear. On this side the region below the mastoid and in front of sterno-mastoid muscle is very painful to the touch. Temperature 105° F., pulse 120, respiration 40 to 45. Choked disc readily seen in both eyes.

The mastoid antrum and middle ear were opened and the attic cleansed with a sharp spoon. The ossicles were absent. The wound was extended by chiselling the bone in a backward direction and at a depth of 3 to 4 mm. the lateral sinus was reached. It was deep-black and plainly pulsating. A hypodermic syringe withdrew dark blood without odor. The wound was packed with sterile gauze and the child put to bed. Four days later when dressings were changed a large portion of necrosed sinus and contents with gangrenous odor were removed. Fresh blood came from above, not from below. Cough, pain in back. Temperature 105° F., pulse 145, respiration rapid and laborious. On the sixth day she died.

On autopsy the sinuses were found filled with dark blood, the sigmoid sinus was destroyed. The jugular bulb was filled with a dirty whitish-yellow clot, which, toward the beginning of the vein, gradually contracted, adhering to the wall. Immediately below the clot, the jugular vein was empty, with smooth walls and normal calibre, but thence it rapidly contracted to a narrow tube with an even diameter of 2 to 3 mm. down the whole length

of the neck. The walls of the tube had the thickness of an artery of small calibre, its inner surface was smooth but the lumen was interrupted by round greyish pellets at intervals of 2 to 2.5 cm., adherent to the walls of the vein. They had the appearance of coagulated fibrin.

CASE 2. A man, aged 18, who had occasional severe attacks of earache as far back as he could remember. On a number of occasions growths removed from the right ear. A mastoid operation had been performed, the antrum exposed and the posterior wall of the ear canal removed. This operation wound never fully healed, a fistulous canal led deep into the substance of the bone. At this time he came under the author's care, the Mt. was gone. Bare bone was felt at the bottom of the middle ear, the probe passed under the lateral wall of the attic and considerably backward. Temperature 100° F. The right ear was totally deaf. The diagnosis was: Extensive chronic caries of the mastoid, attic and tympanum extending into the labyrinth.

A radical operation was done, removing all carious bone. The patient did well for three weeks, when general symptoms of pyemia with articular metastases developed, but there was freedom of lungs and meninges.

Two further operations were done and in the last a puriform thrombus was removed from the transverse sinus. The patient made a slow but complete recovery.

The author makes mention of the well known fact that sinus thrombosis which commonly show articular metastases gives a better prognosis than thrombosis with pulmonary metastases. *Campbell.*

Fracture of Malleus and Annulus Tympanicus.

ALLPORT. (*Archives of Otology*, Vol. XXVIII, Nos. 2 and 3.) The author reports a case of rupture of Mt., fracture of the handle of the malleus and fracture of annulus tympanicus caused by being thrown from a carriage. *Campbell.*

The Operation for Otitic Brain-abscess with Special Reference to its Clinical Value.

ROPKE. (*Archives of Otology*, Vol, XXVIII, Nos. 2 and 3.) The author reviews the literature, describes the technic of the operation and gives the results of 141

cases operated on which he has been able to collect. Of these 141 cases 57, or 40.4 per cent., were permanently cured.

Of 26 cases following acute otitic 11, or 42.3 per cent., were cured. Of 109 cases following chronic otitic 47, or 43.1 per cent., were cured. Hence the prognosis of the operation is about the same in either acute or chronic cases.

The symptoms which give the indications for the operation do not help as much as regards prognosis. Cases with normal or subnormal temperature are, in general, more favorable than those which run a violent course as the virulence of the infection is likely to be less and there is less likelihood of complications.

The presence of focal symptoms before operation is of no value in estimating the future course.

Site and size of abscesses are very important for prognosis. Small abscesses are situated usually near the surface of the brain and naturally offer a better prognosis than those larger and deeper seated.

The contents and walls of the abscess play an important role. Color and odor of pus gives us no clue as to its virulency. Bacteriologic and microscopic examination will reveal whether or not it contains pathogenic germs.

Cases where deep depressions and hollows exist in the walls of the abscess with no living membrane are unfavorable.

Eighty-one of the cases were operated on through the squama. Of these 38.3 per cent. recovered.

Forty-three operated on through the tegmen 40.2 per cent. were cured, and 7 cases where the combined opening was made 70.1 per cent. recovered. *Campbell.*

Extensive Laceration of the Auricle and Complete Section of the External Auditory Canal, with Partial Detachment of the Sterno-cleido-mastoideus Tendon and Splintering of the Tip of the Mastoid by a Blow from a Brick. Operation for Restoration of the Auricle and Canal.

BURNETT. (*Archives of Otology*, Vol. XXVIII, Nos. 2 and 3.) The author comments on the relative infrequency of injuries to the auricle. In all injuries to the external auditory meatus, one must preserve the lumen of the canal. *Campbell.*

II.—NOSE AND NASO-PHARYNX.

On the Importance of Nosebleed as an Early Sign of Softening of the Brain, with Consideration of the Relations of Both Diseases to Arterio-Sclerosis.

KOMPE, CARL, DR., Friedrichroda, Germany. (*Fraenkel's Arch.*, IX, 2, 181.) Softening of the brain (encephalomalacia) is, to-day, generally ascribed to local anemia of the brain tissue, caused by occlusion of arteries by thrombosis or embolism. The etiologic factor is either arterio-sclerosis or specific endarteritis. Only the former is the considered in this article. Before the first indications of sclerosis of the cerebral vessels appear, sometimes premonitory symptoms are observed, which give warning of the early approach of softening due to arterio-sclerosis. To them belong all the early signs of arterio-sclerosis at the heart and periphery (cardiac hypertrophy with aortic changes, tense radial artery, tortuous temporal arteries, etc.)

Sclerosis of the vessels of the brain may be accompanied by the same condition in the vessels of the nose, as they are, partly, branches of the same main artery. As sclerosed blood vessels always rupture *in front* of the thickened and stenosed portion of the vessel, the reason why the hemorrhage must be copious is thus explained; a thrombus not forming, and occlusion not being possible on account of the loss of contractility of the walls. Furthermore, the vessel is not completely severed, but only opened on one side, which always leads to more dangerous hemorrhages. In the author's five cases, the severe nosebleed occurred when arterio-sclerosis had not yet been diagnosticated. It is immaterial if the hemorrhage was arterial or venous as the veins also may be sclerosed.

Spontaneous nosebleed in individuals above forty years of age, which cannot be traced to one of the well recognized local causes, is a suspicious sign of general arterio-sclerosis, and calls for a consideration of all symptoms of sclerosis of the carotid artery or, rather, of the vessels of the brain. If the ophthalmoscope confirms this, a fairly positive diagnosis of partially advanced sclerosis of the brain vessels may be made; and from it, of incipient softening of the brain. Incipient arterio-sclerosis can be influenced, as far as the cellular infiltration is concerned,

but not in regard to the retrogressive process in the vessel walls. Auchard recommends daily doses of 1 to 3 grammes of sodium iodide and of potassium iodide alternately. Vierordt has had surprising results from iodides, especially in sclerosis of the coronary arteries. Hygienic treatment must be used in addition. *Morgenthau.*

On the Removal of Posterior Hypertrophies of the Lower Turbinal.

OSTMANN, PROFESSOR, Marburg, Germany. (*Fraenkel's Archiv*, IX, 2, 200.) In the removal of hypertrophies by means of the cold snare, it is not uncommon to meet with occasional not inconsiderable hemorrhages as well as the difficulty, in some cases, in looping the wire over the base of the hypertrophy; to facilitate the operation by introducing the finger into the naso-pharynx is certainly very unpleasant to the patient. If the hypertrophic tissue be unexpectedly tough, the cold wire may not be able to sever it. There is the same difficulty in grasping the hypertrophy with the galvano-caustic snare; bleeding is here avoided by drawing the wire home slowly and gradually, but the rather large eschar in the neighborhood of the pharyngeal tubal ostium may infect the middle ear, and lead to a, usually severe, middle-ear suppuration. Combining galvano-cauterization with the cold snare is to be preferred to these two methods, because it is done more easily, and does not endanger the ear nearly so much. Hypertrophy of the posterior ends of the lower turbinals large enough to demand removal on account of the respiration is, usually, accompanied by such thickening of the rest of the mucous membrane of the lower turbinal that it is best treated by galvano-cauterization. This method serves both ends, thus permitting treatment of the case in one sitting. By painting with 10 per cent. cocain solution, the anterior two-thirds of the lower and as narrow a strip as possible of the hypertrophy are anesthetized in order not to have too much shrinking of the tumor.

With a flat cautery point a curvilinear furrow is drawn, from behind forward, immediately above the lower margin of the turbinated bone, down to the bone. In order to avoid all bleeding, it is advantageous not to go down to

the bony tissue at once, but to cauterize once or twice in the same furrow. If necessary, a second or third line may be drawn parallel to the horizontal portion of the first. The first cauterization separates the hypertrophy from its base just where the principal vessels enter; and it sinks by its own weight. If the cold snare, bent a little to the outside, be then introduced through the nose and, in drawing it back again, be turned with the curvature looking upward and outward or directly upward, the tumor can easily be engaged. As the wire is drawn home, it glides into the galvano-caustic furrow. After leaving the loop drawn taut for about a minute, even the toughest hypertrophies can generally be severed without loss of blood. *Morgenthau.*

Nasal Catarrh in Children—Its Cause and Treatment.

RICE, C. C. (*Medical News*, April, 1899.) Nasal catarrh in children is most frequently due to abnormal conditions in the nasal chambers and naso-pharynx, especially to adenoids. The technique of adenotomy is given in detail and the usual treatment of these cases.
Scheppegrell

Polyuria and Incontinence of Urine; Symptoms of Adenoids.

HUBER, F. (*Archives of Pediatrics*, Apr., 1899.) A description of the cause and effect in these cases, and the obvious remedies. *Scheppegrell.*

Non-Diphtheritic Pseudomembraneous Rhinitis.

PRICE-BROWN, J. (*Journ. Amer. Med. Assn.*, May 6, 1898.) In simple membraneous rhinitis symptoms, with the exception of nasal obstruction, are largely absent. The disease is frequently unilateral. The author reports a case of a woman of 25 years, suffering from hay fever, in whom he cauterized both inferior turbinals at one sitting. Twenty-four hours later both nares were stenosed and the lining of the passages was covered with false membrane. Two years later the operation was repeated with similar result.

The author concludes that non-diphtheritic pseudomembraneous rhinitis does sometimes occur, and, though

a very rare disease, it is probably as frequent as primary nasal diphtheria. On clinical grounds alone it is possible in the majority of cases to distinguish it from genuine diphtheritic diseases. Owing to a possible mistake in diagnosis, isolation in all cases should be imperative until a reliable bacteriologic examination can be made.

Scheppegrell.

Disfigurements of the Nose and Mouth, and their Surgical Treatment.

ROBERTS, J. B. (*Journ. Amer. Med. Assn.*, May 13, 1899.) The saddle-back nose may be improved by making an incision through the skin and slipping a plano-convex piece of celluloid under the skin so as to fill up the hollow and make the line of the dorsum of the nose straight or nearly so. In such cases it is preferable to separate a portion of the nasal process from the upper maxillary bone by means of a chisel introduced through the nostril. If this is done on both sides of the nose, the pieces of bone may be pressed upward and forward so as to elevate the bridge of the nose, and held in this position until union occurs by pins thrust transversely under them.

An angular nose is remedied by an incision over the bridge and chiseling away the redundant bone or cartilage. It is preferable to make the incision a little to one side of the median line of the nose.

Twisted and crooked noses can be corrected by remedying the deflected septum by intranasal operation, separating the soft tissues of the nose very freely from their bony support, bending or twisting the nose into a better shape, and retaining it in this position by means of pins or plugs.

Scheppegrell.

Asthma of Nasal Origin and its Radical Cure.

PAYNE, R. W. (*Pac. Medical Journal*, May, 1899.) In a number of cases, the author has been enabled to relieve a paroxysm of asthma by applying a solution of cocain to the nostrils, which illustrates the influence of nasal irritation in developing these paroxysms. In cases of asthma, the nasal cavities should be carefully examined, and where pathologic conditions exist, they should be corrected. The majority of cases are thus benefited, if not cured.

Scheppegrell.

The Influence of Turbinal Hypertrophy upon the Pharynx.

SOMERS, L. S. (*University Med. Magazine*, May, 1899.) A review of the effects of mouth-breathing in developing pharyngeal disease. *Scheppegrell.*

Empyema of the Antrum.

OHLS, H. G. (*Journ. Amer. Med. Assn.*, July 15, 1899.) After a careful review of the etiology, pathology, symptomatology and diagnosis of antral sinusitis, the author reports in detail two cases, the first a personal experience of a mild acute catarrhal sinusitis, and the other a typical severe inflammation due to a root-absecss and followed by recurring frontal headaches. The article concludes with a careful bibliography of the subject. *Scheppegrell.*

Treatment of Chronic Empyema of the Accessory Sinuses.

STOUT, GEO. C. (*Journ. Amer. Med. Assn.*, June 24, 1899.) Caries of the teeth is more frequently the result than the cause of antral disease. A radical operation is indicated in the majority of cases, although many cases of both frontal and maxillary sinusitis are curable by parcentesis through the nasal chambers. Whatever operation is selected, thorough drainage is the chief object sought in the treatment. *Scheppegrell*

Some Points on the Symptomatology, Pathology and Treatment of Diseases of the Sinuses Adjacent and Secondary to the Orbit.

BULL, C. S. (*Medical Record*, July 15, 1899.) Empyema of the antrum is usually the result of dental or alveolar disease, although it may follow inflammation of any of the adjoining parts. Treatment in all cases of empyema should consist of free opening, curetting, irrigation and drainage. Of malignant growths, sarcoma is the most frequent. *Scheppegrell.*

Urticaria and Odors.

JOAL. (*Revue Hebd. de Laryngologie, etc.*, June 10, 1899.) Three cases are reported in which certain odors produced urticaria. In one, the odors from aromatic essences used in the manufacture of liquors; in another, of iodoform, and in the third, the odor from roses, lilacs and hyacinths, accompanied in the two last cases with symptoms of hay fever. *Scheppegrell.*

Nasal Bacteria, the Relation they Bear to Disease.

KYLE, D. BRADEN. (*Journ. Amer. Med. Assn.*, June 10, 1899.) The results obtained conform with the results published by Drs. Park and Wright. The author believes that there is no doubt of the fact that the accumulation of secretion in the nasal cavity forms a favorable nidus for bacterial proliferation. *Scheppegrell.*

Arm-to-Arm Vaccination; Nasopharyngeal Syphilis a Result Thereof.

DONNELLAN, P. S. (*Journ. Amer. Med. Assn.*, June 10, 1899.) At the age of five years the patient was vaccinated on the right arm by arm-to-arm vaccination. A few months later the submaxillary gland on the same side became enlarged, but did not suppurate. Four years later, examination showed loss of both nasal bones, with arrest of development of the cartilaginous septum, which resulted in the saddle-shape deformity of the nose. The mucous membrane of the nose and throat showed the effect of syphilitic disease. *Scheppegrell.*

Hypertrophic Rhinitis in Female Patients at Puberty, and the Abuse of the Cautery in the Treatment.

ROBINSON, W. K. (*Journ. Amer. Med. Assn.*, May 27, 1899.) It is well known that women with healthy nasal organs suffer from engorgement of the turbinated corpora cavernosa at each menstrual period. The author gives the history of three cases in which atrophy in the nasal chambers resulted from cauterization during the development of puberty. *Scheppegrell.*

Malignant Disease of the Nose and Throat.

WRIGHT, JONATHAN. (*Journ. Amer. Med. Assn.*, June 10, 1899.) There appears to be some exception to the usual fatality of malignant disease, since the author has observed several instances of recovery without operation in which the diagnosis of malignancy had been made by competent authorities. It is possible that in these cases there were errors in the microscopic examination. It is a fact, however, that such growths in the nose present a clinical picture entirely different from that met with in similar neoplasms treated in the larynx. Adenoma in the nose is rare, and when there usually becomes converted into adeno-carcinoma or adeno-sarcoma. Such tumors are

usually of slow growth and would seem to present a favorable chance for operation. He has found that they are very apt to occur in the aged and feeble, and the operation is often a most difficult one. In many cases it is almost impossible to secure a fragment of tissue for microscopic examination. Clinically, there is very little difference between adeno-sarcoma and adeno-carcinoma. In some cases it is very difficult to distinguish between syphilitic granuloma and small round-cell sarcoma, the most malignant of tumors. The surgeon should, however, always bear in mind the possibility of the existence of syphilis, and in any doubtful case place the patient on iodid of potassium.

Sarcoma of the tonsil is by no means rare, and he had himself met with 44 cases of the small round-cell variety. When affecting the tonsil, it is sometimes very difficult to make the differential diagnosis between sarcoma and simple hypertrophy or syphilitic hypertrophy.

Scheppegrell.

Acute Rhinitis.

WARREN, W. (*Med. Age*, Jan., 1899.) Small doses of calomel are advised as being abortive in the early stage. In the later stage, when the patient cannot visit the physician's office, a powder consisting principally of cocain and zinc oleate is recommended, the preparation to be used every three or four hours.

[In view of the many dangers attending the use of such a drug as cocain in the hands of the patient, the method of prescribing it for the patient's own use should be severely condemned. S.] *Scheppegrell.*

The Histopathology of Hypertrophic Rhinitis in Children.

GOODALE J. L. (*Journ. Amer. Med. Assn.*, Mar. 11, 1899.) A histologic description of three cases of hypertrophic rhinitis in children. As the subject is one of much interest, the following case, which is essentially similar to the other two, is given with considerable detail:

The patient, a poorly nourished girl of 10 years, had suffered from nasal obstruction for one year. The adenoid tissues were not much enlarged, but the lower turbinals on both sides were enlarged and in contact with the septum. An examination with a probe showed that the hy-

pertrophy consisted of the soft tissue covering the bone, the latter being unchanged in size. The color of the mucous membrane was much paler than usual; cocain caused but slight shrinkage; there was a moderate amount of mucus in the nasal passages.

A portion of the lower turbinate on the right was removed with the snare and hardened in Zenker's fluid. Under the microscope, sections showed a furrowing of the mucous membrane, which varied in thickness from three to four cell layers on its exposed surface to 15 or 20 cell layers along the side and bottom of the furrows. The cells were columnar in type and showed nothing abnormal in the cytoplasm or nucleus. The epithelium lining the furrows was ciliated, while that on the exposed free surface showed no cilia. In the intercellular spaces were a few scattered polymorphonuclear neutrophiles.

Below the mucous membrane was a loose connective tissue extending to the periosteum. The transverse diameter of this connective tissue was from three to four times greater than normal. It appeared as an irregular wide-meshed, exceedingly delicate fibrous net-work, in which were contained scattering clusters of glands, a few thin-walled, more or less tortuous blood vessels, here and there a large sinus, together with numbers of free lying cells. The relative proportion of these constituents varied, as it does normally, in different parts of the sections, the free lying cells being most numerous near the mucous membrane, while the glands are more deeply situated. Furthermore, at the extreme anterior end of the turbinate the reticulum is loosest and the blood vessels, sinuses, round cells and glands are fewest in number, while a short distance posteriorly the fibrous reticulum is more compact, and these structures are proportionately more numerous.

The free lying cells are most numerous just below the mucous membrane, but are nowhere abundant or gathered to form groups. Those nearest the endothelium of the blood vessels have the character of the small mono-nuclear leucocytes of the blood. In the immediate neighborhood, plasma cells are found in small numbers, together with cells intermediate in form and staining properties between small mono-nuclear leucocytes and plasma cells.

These two types of cells with the intermediate forms are

also found in fair numbers in the immediate neighborhood of the glands, and are as well sparingly scattered throughout the whole of the connective tissue. Small numbers of polymorphonuclear neutrophiles occur irregularly distributed, together with a few eosinophilic polynuclear leucocytes. A relatively large number of *mastzellen* are found, most numerous near the mucous membrane. These are comparatively small with a few small grabules.

The sinuses are sparingly found chiefly in the central portions of the connective tissue. They are elongated, oval in shape, are lined with endothelium, and contain a varying amount of amorphous granular material, together with, in some cases, red and white blood-corpuscles.

The blood vessels are few in number, traverse the connective tissue in all directions, and possess a wall of one or two layers of endothelial cells.

The glands found in this region present no noteworthy alterations. *Scheppegrell.*

Vertigo, Especially as Related to Nasal Disease.

STEIN, O. J. (*Phil. Med. Journal*, Jan. 7, 1899.) A man of 49 years suffered from repeated attacks of vertigo. Inspection showed enlargement of the turbinals, especially of the middle. Politzerization gave a slight hissing sound from the left ear, although no perforation could be detected. Turbinectomy of the right middle turbinal and subsequent cauterization of the inferior turbinal resulted in rapid cessation of the vertigo.

The author believes that the impulse from the nostril sent along the different branches of the trigeminal nerve is reflected along the vasomotor nerves, producing an alteration in blood pressure in that region of the brain presiding over equilibrium and co-ordination.

Scheppegrell.

Empyema of the Frontal Sinus and Intracranial Infection.

GIBSON, C. L. (*American Journal of Med. Sciences*, Mar., 1899.) A man of 32 years noticed a swelling at the anterior angle of his left orbit. Five days after its appearance it was lanced and pus evacuated. A sinus persisted, and a year later the left frontal sinus was trephined and drained externally, no attempt being made to establish drainage through the nose. The discharge continued and

polypi were removed from the nostril at various times during the past two years.

The patient complained of persistent frontal headaches, more marked on the right side. He lost 15 pounds. Under ether anesthesia, a horizontal incision was made in the line of the left eyebrow, and the fistulous opening enlarged by means of a gouge. The cavity was freely scraped with a Volkmann spoon, which was found to easily penetrate into the right frontal sinus, permitting the escape of considerable pus. The probe was passed upward from the nose and a rubber drainage tube inserted, which was brought out through the external opening and through the nostril.

Two days after the operation, the patient developed stiffness of the neck and exhibited the symptoms of meningitis. Three days later there was remission of the symptoms, but a recurrence developed and the patient succumbed nine days after operation with all the evidences of septic meningitis. The autopsy showed intense congestion of the pia; moderate amount of pus in the pia at the base of the brain, especially over the pons and the cerebellum. The cerebral wall of the right frontal sinus was entirely wanting. The cribriform plate was carious, especially on the right side. An angular mass of bone (cerebral wall) projected about three-quarters of an inch above the site of the left frontal sinus, pressing laterally against the crista galli. The upper surface of this bony mass presented two openings, one small, the other half a centimeter posterior to the first and communicating with the frontal sinus.

A diagnosis of empyema of the frontal sinus, caries of the frontal bone, and purulent meningitis was made.

Scheppegrell.

Deformities of the Septum Narium. their Classification with a View to Treatment.

CASSELBERRY, W. E. *(Journ. Amer. Med. Assn.*, Mar. 4, 1899,) A convenient classification of the various forms of excrescences or spurs of the septum, deviations of the septum, combined excrescence and deviations of the septum, and the various forms of operation advisable for each condition. *Scheppegrell.*

The Climate of Colorado; its Influence upon the Nasal Mucous Membrane.

BLACK, MELVILLE. (*Journ. American Med. Assn.*, Marc 4, 1899.) While the climate of Colorado is of the greatest benefit to pulmonary diseases, it has not the same beneficial influence upon nasal affections. This is due to the fact that the dry atmosphere tends to develop a vascularity followed by hypertrophy and then by sclerosis, the latter process taking place more rapidly than in a moist atmosphere. Myxomatous degeneration, however, is rarely acquired. *Scheppegrell.*

Disease of the Frontal Sinus.

PFINGST, ADOLPH. (*Medical Age*, March 10, 1899.) After a résumé of the pathology of frontal sinusitis, a case is described of a man who received a blow on the left side of the vertex of the head. Soon afterwards he began to have dull pains in the frontal region of that side, and a month after the injury a spontaneous perforation took place just under the supraorbital ridge, a little to the nasal side of the orbit. A modification of the Ogston-Luc operation was performed, the opening being made below the supraorbital ridge instead of above it, on account of the presence of a fistulous opening at that point. It was followed by good results. *Scheppegrell.*

Eruptions on the Face Due to Nasal Pressure.

MURRAY, G. D. (*Medical Record*, March 25, 1899.) In skin diseases of the face where the origin is uncertain, a careful search should be made for some irritation in the nose. Independent of pathologic lesions due to specific germs, such as syphilis, erysipelas, etc., there are many conditions due to pressure only, as from a spur hypertrophied turbinal, etc., which may leave their impress on the skin of the face. Several cases are given in illustration. *Scheppegrell.*

Epistaxis. Simple and Efficient Means for its Control.

CORNICK, BOYD. (*Journal American Med. Assn.*, Mar. 2, 1899.) A dry plug of prepared sponge about the size and length of the little finger of a 12-year-old boy is trimmed with scissors, soaked in boiled water, squeezed dry from unnecessary fluid and inserted in its full length

along the floor of the bleeding nostril. It should not be allowed to remain longer than 12 to 24 hours.

Scheppegrell.

Adenoid Vegetations, How and When Shall we Operate for Them.

MAYER, EMIL. *(Journ. Amer. Med. Assn.*, March 4, 1899.) The Schleich mixture No. I is preferred for the anesthesia, the head of the patient being in a dependent position. *Scheppegrell.*

The Treatment of Ozena, with Special Reference to Cupric Electrolysis.

MCBRIDE. *(Edinburgh Medical Journal*, Vol. V.*)* The author reviews the literature on ozena and gives the histories of eight patients on whom he had employed cupric electrolysis. The strength of the current used was 3 to 10 milliamperes, and each sitting lasted about ten minutes. After cleansing the nostrils, cocain was generally used. The copper needle was attached to the positive pole and inserted into the inferior or middle turbinated—sometimes into the tissues of the middle meatus, while the platinum (or steel) needle was passed into the septum.

Four of the eight patients were practically cured for period extending to eighteen months. By cure is meant, absence of fetor and crust formation. In one case there was marked improvement. In one case apparent cure for some months, then syringing had to be resumed.

In two cases the improvement only lasted a few weeks.

Campbell.

Sarcoma of the Frontal and Ethmoidal Sinuses.

BURNETT. *(Archives of Otology*, Vol. XXVIII., Nos. 2 and 3.) A man aged 57, had a swelling at the upper and inner angle of the right orbit, which gradually increased in size. The upper lid was edematous and covered the pupil most of the time. The eyeball was displaced downward and outward. Operation was undertaken, and a mass of soft reddish material removed by spoon and finger nail. The large cavity thus revealed included the right and left frontal sinuses, and invaded the ethmoid on the right side.

Microscopic examination of the tissue showed it to be a round-celled sarcoma. *Campbell.*

III.—MOUTH AND PHARYNX.

Etiology and Treatment of Alveolar Hemorrhage.

HARTMAN, J. H. (*Journ. Amer. Med. Assn.*, July 15, 1899.) Hemorrhage may be due to traumatism, laceration or fracture of the bone, or to a hemorrhagic diathesis. Simple and direct pressure on the part is the best treatment, but tannin is the best agent for local application, and may be used in conjunction with pressure.

Scheppegrell.

Throat Cough.

BACH. (*Journ. Amer. Med. Assn.*, July 22, 1899.) Hypertrophy of the faucial. pharyngeal and laryngeal tonsils are frequently the source of irritation that may produce paroxysms of cough. Cauterization is the most effective treatment. *Scheppegrell.*

Frasnotomy Speculum.

SUTHERLAND, J. L. (*Journ. Amer. Med. Assn.*, Apr. 29, 1899.) A speculum devised by the author, which has been found useful in cases of tongue-tie.

Scheppegrell.

Extragenital Chancre, with Report of Cases.

BOSHER, C. L. (*Medical Register*, May, 1899.) Among the cases reported are two of the lower lip and one of the tonsil. The source of infection is not stated.

Scheppegrell.

Excision of the Tonsils.

PETERT, W. H. (*Journ. American Med. Assn.*, Mar. 11, 1899.) A description and illustration of a tonsullar snare devised by the author, with an explanation of its application and advantages for this operation. *Scheppegrell.*

The Faucial Tonsil; its Sphere as an Agent in Systematic Infection.

SWEENY, G. B. (*Journ. American Med. Assn.*, Mar. 25, 1899.) The tonsil is an open gate-way for the reception of all kinds of disease germs, and many cases of systematic infection find their origin in this portion of the glandular organism. *Scheppegrell.*

Black Tongue; With Photograph of a Case and Brief Consideration of its Etiology.

GOTTHEIL, W. S. (*Archives of Pediatrics*, Apr., 1899.) The patient, a child of two years, had the usual black-tongue discoloration, but without the papillary hypertrophy which has given this disease the name of "hairy

tongue." The affection is apparently harmless, save for the slight discomfort it occasions. By the use of a mouth-wash of a saturated solution of hyposulphite of soda the discoloration was removed in about a week, although recurrence is probable. *Scheppegrell*

The Submerged Tonsil.

PYNCHON, EDWIN. (*Chicago Med. Recorder*, Vol. XV.) A description of the symptoms and pathology, with a recommendation for tonsillotomy by electro-cautery dissection for its treatment. *Scheppegrell.*

Gumma of the Tongue.

GOTTHEIL, W. S. *(Int. Med. Magazine*, Dec. 1898.*)* On examination, a woman of 24 years, was found to have a tumor occupying the middle area of the anterior part of the tongue, which measured one and a half inches in length

and three-fourths of an inch in breadth. The submaxillary glands were moderately swollen and quite hard. The anamnesis was negative as regards luetic infection, but specific treatment gave prompt relief. An excellent half-tone engraving illustrates the article.

IV.—LARYNX.

On Laryngeal Diseases in Syringomyelia.

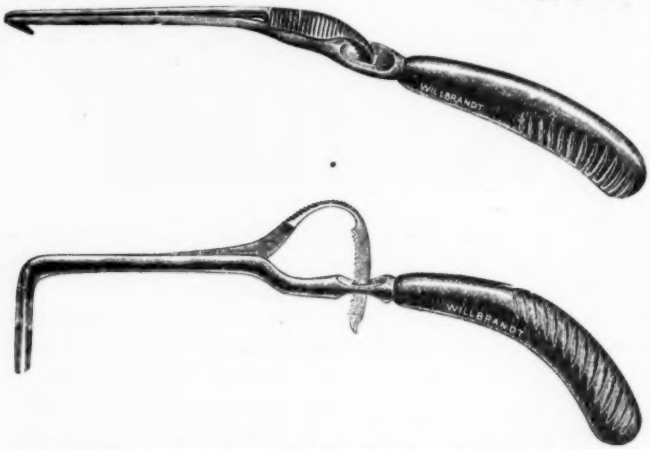
BAUROWICZ, DR. ALEXANDER, Krakow, Austria. *(Fraenkel's Archiv.*, IX, 2, 292.) The author observed a gradually developing paralysis of the left posticus muscle in a man of 31, followed by paralysis of the right half of the

soft palate and by an, also gradually, developing paralysis of the right posticus. Antisyphilitic treatment, application of electricity, etc., were of no avail. The right half of the palate recovered partly, and deglutition became easier. The sensibility and reflex activity of the mucous membrane of the palate, pharynx and larynx always remained normal. The diagnosis of syringomyelia was confirmed by several authorities. This is the third case reported in which the nervous disease was accompanied by posticus paralysis. *Morgenthau.*

A New Intubator.

COWGILL, W. M. (*Jour. Amer. Med. Assn.*, April 8, 1899.) The instrument is a modification of the "French" intubator. The modification consists of the angle put in the instrument. The angle at *A* in the shaft of the instrument brings the handle to the right and throws the hand of the operator out of his line of vision. The pistol handle *B*, which is turned downward and to the right, gives the operator an easy grasp of the instrument.

Scheppegrell.



The "French" instrument with its straight hand and shaft throws the operator's hand into a very awkward position directly in front of him, and at the crucial moment, when the tube is about to enter the larynx, gives the arm and hand a rigidity not conductive to easy and accurate work. In the instrument described, these awkward posi-

tions are overcome, and make the operation of intubation easier. The instrument is made by Emil Willbrandt Surgical Mfg. Co., St. Louis. *Scheppegrell.*

Foreign Bodies in the Larynx in Children.

CLARK, J. PAYSON. (*Boston Medical and Surgical Journal*, June 1, 1899.) After stating that foreign bodies are more common in children than adults in the proportion of nearly two to one, he remarks that anything which causes a sudden strong inspiration when an article is in the mouth favors its entrance into the glottis. It may be arrested there or pass on into the trachea or a bronchus. Articles are caught in the larynx because on account of their peculiar shape they catch in one of the ventricles or stick into the mucous membrane somewhere. The most common objects are bones, beans, fruit stones, coins, needles, pins, seeds and grain. The statistics of Preobraschensky covering the period up to 1893 are quoted from at length. They show a mortality of operated cases of 27 per cent. while the unoperated cases had a mortality of 45 per cent. Since 1893, the author has collected the statistics of 34 cases of foreign bodies in the air passages of children of which only three died (less than ten per cent.). He reports in detail five successful cases from the Mass. Genl. Hospital, the last one his own. In all of these except the last tracheotomy was done and all recovered. In the author's case a five year old child had gotten a small tin tobacco tag into the throat three days previously. The tag was located in the larynx on laryngoscopic examination under ether. One-half of it was below the glottis and held in place by the lower end sticking into the mucous membrane. It was removed with forceps and recovery was uneventful. Dr. Clark urges that a laryngoscopic examination be always made in these cases, etherizing whenever necessary. He depreciates the use of emetics and says that inversion is of use only when the foreign body has weight enough to be affected by gravity and is not too firmly held by muscular contractions. Sulphate of atrophia is of value 1/200 gr. by mouth before etherizing as it lessens the amount of mucus secreted. If the dyspnea is urgent tracheotomy must be done at once but if not an attempt at laryngo-

scopic examination ought to be made and the foreign body removed through the mouth if possible. The laryngoscopic examination is less valuable after tracheotomy since it puts into complete repose the larynx and neighboring muscles relieving the spasmodic contraction which may hold the foreign body firmly fixed. *Richards.*

Statistical Contribution to the Question of the "Lateral Correspondence" of Laryngo-Pulmonary Tuberculosis.

MAGENAU, DR. CARL., Heidelberg, Germany. *Fraenkel's Arch.*, IX, 2, 304.) Krieg published an article (Ibid, viii, 3), on the Invasion of the Larynx by Tuberculosis, in which he traces the origin of the laryngeal tuberculosis, in most cases, to infection by the way of the lymphatic current from the lung to the larynx. Of 700 cases of laryngeal tuberculosis, 275 (= 39.3 per cent.) were unilateral; of these latter, 252 (91.6 per cent.) were synchronous ("corresponded") with a pulmonary affection on the same side; of the 700 cases, therefore, 36 per cent. were unilateral and corresponding. From these figures, Krieg concludes that the correspondence of location of pulmonary and laryngeal affection is not accidental, and rejects the theory that these unilateral laryngeal tubercular affections originate from the trachea (inhalation or sputum infection). He is of the opinion that in the large majority of cases of laryngeal phthisis, infection by way of the circulation is the rule; that is to say, by the lymph current from the lung to the larynx. The authors, as is known, differ as to the invasion of the tubercular virus into the larynx, as do the reports on the frequency of unilateral and corresponding laryngo-pulmonary phthisis. The author, who is assistant to Professor Jurasz, was instructed to examine all cases observed from 1891 to 1898. Only such were included in which the notes appeared to be accurate and trustworthy, altogether, 400. Of these, 274 were males; 126 females—a greater number, as generally accepted, belonging to the male sex; 280 patients (= 70 per cent.) were between 20 and 40 years of age.

In order to facilitate comparison, the author adopts Krieg's division of the cases:

1. Unilateral.
2. Bilateral.
   a. With predominance of one side.
   b. With demonstrable predominance of one side.
3. Median.

The last category embraces all cases with affection of the posterior wall or epiglottis alone, and those in which also other laryngeal parts were involved, i. e., all advanced cases, which have no bearing on the question at issue. These formed a considerable group, 182 (= 45.5 per cent.), of 400 cases. Purely unilateral disease was found in 65 (= 16.25 per cent.), not unilateral, 335 (= 83.75 per cent.). In these 65 unilateral cases, 26 (= 40 per cent.) were diseases on the same side as the lung; in 38 (= 60 per cent.), there was not correspondence (25 times both lungs were attacked); 14 times crossed lung and larynx tuberculosis was observed. Of the author's 400 cases only 26 (= 6.5 per cent.) were, therefore, on one side only, and on the same side (unilateral and corresponding). This result differs markedly from Krieg's 39 per cent., unilateral and corresponding, in 700 cases. Furthermore, Krieg refers to those cases of bilateral disease in which one side distinctly predominated. In 103 cases of bilateral tuberculosis, 81 (= 78.5 per cent.) showed greater tubercular changes on the same side in both the lung and the larynx. In the author's 400 cases, one side could be seen to be more affected in 61 instances; of these, 22 (=36 per cent.) were corresponding. He does not, however, wish to draw any inferences from this disparity against Krieg's theory of the origin of laryngeal tuberculosis. The explanation of infection by the lymph current appears very plausible, but statistics do dot seem to be of value in confirming it.

The true proof of the possibility of the invasion of tubercle bacilli from the lung to the larynx by way of the lymph current has not as yet been brought; and its burden must be put upon physiology, anatomy, and pathologic anatomy. The questions which Krieg himself asks, at the end of his article, of these branches of science await answers.

Unilateral.	Bilateral.	Median.
65 = 16.25 per cent.	153 = 38.25 per cent.	182 = 45.5 per ct.

Corresponding.	Non Corresponding.
25 = 40 per ct.	39 = 60 per ct.

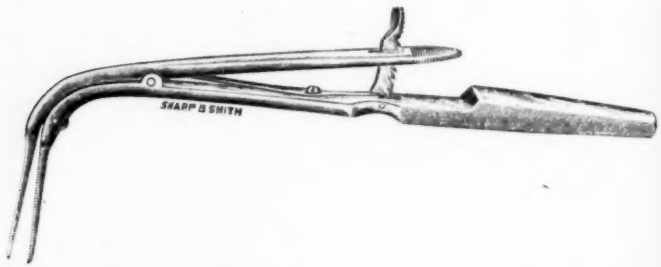
Left, 12.
Right, 14.

Without predominance of one side	With predominance of one side 61 = 39 per ct.	
92 = 60 per ct.	Corresponding. 22 = 36.1 per ct.	Non-Corresponding. 39 = 63.9 per ct.

Morgenthau.

A New Intubation Instrument.

WHALEN, CHARLES J. *(Jour. Amer. Med. Assn.*, June 24, 1899.) The advantages claimed over the O'Dwyer



instrument is in the cheapness, the introducer and extractor being included in the same instrument.

Impaction of Foreign Body in the Larynx; Recovery After High Tracheotomy.

QUINLAN, F. J. *(Journ. Amer. Med. Assn.*, June 10, 1899.) A boy who was admitted to the hospital suffered intensely from dyspnea. Although the foreign body was lodged between the vocal cords, all efforts to remove it by intralaryngeal methods were unsuccessful. A tracheotomy was performed, by means of which the foreign body, a double-flanged screw, was removed without difficulty.

Scheppegrell.

Sudden Death from Foreign Body in the Larynx.

JENKINS, W. T. *(Jour. Amer. Med. Assn.*, June 10, 1899.) The first case, a boy, while playing in the park

suddenly became cyanotic and died before medical aid could be summoned. The autopsy showed the opening between the vocal cords to be occluded by a bone collar button.

Several instances of instantaneous death have also followed the lodgement of a bolus of meat over the larynx. In another case reported, some of the teeth had been knocked down into the throat, an autopsy showing the teeth lodged at the bifurcation of one of the larger bronchi, and another death resulted from the rupture of a broken-down bronchial node into the trachea. *Scheppegrell.*

Intubation in Diphtheria.

MOORE, THOS. H. (*Phil. Med. Journ.*, June 24, 1899.) A record of 17 cases—12 of which were performed in the country—showing the advantage of intubation over tracheotomy. Antitoxin and intubation were instrumental in saving a number of cases that appeared critical.

Scheppegrell.

The Connection of the Female Generative Organs and Laryngeal Affections.

OPPENHEIMER, S. (*Phil. Med. Jour.*, Feb., 1899.) A clinical history of a number of cases illustrating the effect of diseases of the generative organs, menstruation and pregnancy on the larynx; also the effect of ovariotomy on the singing voice. *Scheppegrell.*

Phonation.

CUTTER, EPHRAIM. *Jour. Amer. Med. Assn.*, March 18, 1899.) An interesting exposition of this subject showing the relation of phonation to singing, which should be read in the original. *Scheppegrell.*

Formaldhyd; Its use in the Treatment of Tubercular Laryngitis.

GALLAGHER, THOS. J. (*Jour. Amer. Med. Assn.*, March 4, 1899.) In using formaldehyd, the possibility of producing gangrene of the parts should be considered. It is safe to allow the patient to use a mild solution of 1 to 500, two or 3 times per day. The relief of the dysphagia is very marked, and in many cases formaldehyd is a good substitute for cocain. Its greatest effects are seen in the ulcerative and vegetative types. Stronger solutions, from 1 to 10 per cent., should be applied two or three times per week. *Scheppegrell.*

Paramonochlorophenol.

RICHARDS, GEO. L. (*Journ. Amer. Med. Assn.*, March 4, 1899.) The author has used paramonochlorophenol in a number of cases of a strength of 4 to 10 per cent. in equal parts of glycerine and water. Like lactic acid, it does not seem to injure any of the sound tissue with which it may come in contact. It acts more advantageously when used in connection with lactic acid. In the cases reported it seemed to have had good results, and even in severe cases improvement was noted.

Scheppegrell.

Falsetto Voice in the Male.

MAKUEN, G. H. (*Journ. Amer. Med. Assn.*, March 4, 1899.) The falsetto voice in the male is uncommon, and in an experience of more than 20 years as vocal teacher the author has not seen more than 10 or 12 cases, only five having reported for examination and treatment. These the author describes in detail. The direct cause of the defect in each case was found to be a faulty co-ordination of certain laryngeal muscles, this defect being mainly extrinsic to the larynx. By teaching the patient to use the voice in the chest register, all the cases were cured without difficulty. *Scheppegrell.*

Foreign Bodies in the Larynx.

KNIGHT, CHAS. H. (*Medical News*, April 15, 1899.) A boy, six weeks before application, had developed a violent fit of coughing and dyspnea, and it was surmised that he had swallowed a shoe hook. Many attempts were made to remove the hook, both with and without anesthesia, without success. A partial tracheotomy was performed and the hook was removed without difficulty.

Scheppegrell.

Catarrhal Laryngitis.

SLACK, H. R. (*Jour. Amer. Med. Assn.*, May 6, 1899.) The following formula first suggested by Dr. Jos. Holt, of New Orleans, is recommended:

R. Chloralis ..... gr. lxxv
Potassii bromidi ..... gr. xlv
Ammonii bromidi ..... gr. xxx
Aquae cinnamonii ..... ad. ℥ii
M. Sig. Teaspoonful, and repeat in 20 minutes if not relieved.

Scheppegrell.

Recurring Laryngeal Stenosis After Intubation

FISCHER, F. (*Journ. Amer. Med. Assn.*, May 13, 1899.) The author indorses the opinion of the late Dr. O'Dwyer, that in the large majority of instances this condition is the result of traumatism. It may result from the use of improperly constructed intubation tubes, from allowing calcareous deposits to form on the tube, or from unskillful or rough manipulation in connection with the operation. Calcareous deposits do not form on rubber tubes.

Scheppegrell.

Some Experience with Intubation.

SAMPSON, F. E. (*Medical Herald*, June, 1899.) If the patient seems greatly exhausted, intubate in the prone position. If the case is more desperate than this, with slow, irregular and convulsive breathing, a tracheotomy should be done, using local anesthesia, or the operation should be performed without this. If the patient revives, intubate and close the tracheotomy wound. *Scheppegrell.*

Positiono the Vocal Cord After Severing the Recurrent Nerve, and Posticus Paralysis.

BURGER, H., Amsterdam, Holland. (*Fraenkel's Archiv.*, IX, 2, 203.) In an article, which, because of its completeness, cannot be fairly abstracted, Burger contends that the facts known up to now warrant the following conclusions:

1. That a physiologic difference exists between the two antagonistic groups of laryngeal muscles, and that this difference embraces not only the muscles, but also the corresponding nerves.

2. That the dilators of the glottis obey other laws of stimulation than do the contractors: the latter, generally speaking, demanding a stronger stimulus.

3. That the dilators perish sooner, and that the contractors offer greater resistance.

With these physiologic facts corresponds the pathologic fact that the dilators are more liable to disease, i. e., Semon's law is confirmed. *Morgenthau.*

A Case of Hysterical Aphonia with Ventricular Band Speech.

HUNT. (*Journal Laryngology, Rhinology and Otology*, July, 1899.) The patient, a woman, age twenty-seven, eleven years ago became aphonic through fright. On

laryngoscopic examination it was seen that the ventricular bands came firmly together on attempted phonation, so as almost entirely to hide the ligamentous glottis. However, it could be seen that the cartilaginous glottis was wide open and that the vocal processes remained apart.

All efforts to restore her voice proved futile, though at various times galvanism, hypnotism, and vocal drill were employed. A gradual improvement in the voice, however, took place in the last two or three years, until she could talk in a deep, rough but fairly powerful voice. Last September her voice became aphonic again, and she ascribes the loss of her voice to a fright.

Laryngoscopic examination now shows normal closure of the true cords on phonation, with considerable hypertrophy of the ventricular bands, so that on quiet breathing the cords are quite hidden. The points in this case which appear of interest are: (1) The severity of the original nerve shock; (2) the recovery after exposure to excitement when all the usual remedies had failed; (3) the development in the course of time of ventricular band speech to replace the lost natural voice. *Loeb.*

Remarks on Laryngeal Growths in Young Children.

MACKENZIE. (*British Medical Journal*, May 20, 1899.) The author presented a case in a girl, aged 17 months, who had suffered from increasing huskiness for about one year. Some respiratory stridor can be detected, especially when she struggles or cries. No hereditary tendency can be elicited and the child has suffered from no serious illness.

This condition of growths on the vocal cords at first affecting vocalization only, but ultimately producing respiratory symptoms also, arises at three different periods of child life.

First. It may be there at birth.

Second. It may be detected for the first time, at any period up to about the sixth month with no appreciable exciting cause.

Third. It occurs as a sequela of one of the exanthemata at any age up to about the fifth or sixth year.

After considering the various methods of treatment, the author urges tracheotomy because breathing is relieved and as time wears on the growths freed from irritation of

coughing and phonation gradually lose their vitality and become detached from the vocal cords without any tendency to recur. As a rule six months is sufficiently long for the tube to be worn. *Campbell.*

MISCELLANEOUS.

Aqueous Suprerenal Extract; its Surgical and Therapeutic Uses.

MULLEN, JOS. *(Journ. Amer. Med. Assn.*, May 20, 1899.) The extract increases the anesthesia and the ischemia of cocain. It appears also to modify the post-operative swelling and facilitates the healing of the parts. The author has never seen any evidence of cocain toxemia when the extract had been taken. *Scheppegrell.*

Success in the Use of Diphtheria Antitoxin.

KOENIG, A. *(Phil. Med. Journal*, May 27, 1899.) During an outbreak of diphtheria at the Rosalia Foundling Asylum and Maternity Hospital, two cases already infected were injected with 800 antitoxin units. Cultures from all the children in the ward in which these cases appeared were examined and a large number showed the bacilli present. Of the throats of 74 children examined, 38 proved positive, and of 22 adults, 14 were positive. All persons found infected were isolated and injected, only one case resulting fatally. The antitoxin used was the product of the Laboratory of the Pittsburg Bureau of Health. *Scheppegrell.*

The Diphtheria Bacillus; its Persistence in the Mouths of Convalescents.

RUSSELL, H. L. *(Journ. Amer. Med. Assn.*, June 24, 1899.) In the first case described, antiseptic throat washes were used during treatment and convalescence, but, in spite of this, virulent diphtheritic organisms, with only occasional exceptions, were found four and a half months after the outbreak of the disease. In the second case they were found three and a half months after the development of the disease.

These cases are by no means exceptional. While it is impossible to maintain rigid quarantine for such length of

time, a knowledge of these facts enables us to use greater precaution against infection. *Scheppegrell.*

The Value of Thiol in Nose and Throat Practice.

WELLS, W. A. (*Phil. Med. Journal*, Apr. 15, 1899.) Thiol is an artificially produced ichthyol free from the objectionable odor, and having in addition the advantage that it does not cause irritation nor bleeding of the eroded surfaces. It has no toxic effects and its stain is easily removed. It is prepared in powder and liquid form. The following formulas are recommended:

℞. Thiol liquid - - - 2 grams.
Water - - - 100 "
M. Sig. To be used as a spray or gargle.

℞. Thiol liquid - - - 10 grams.
Glycerine - - - - 50 "
M. Sig. For swabbing the throat.

℞. Thiol siccum - - - 5 grams.
Vaselin - - - 10 "
Lanolin - - - - 20 "
M. Sig. To be used as ointment.

℞. Thiol siccum - - - 5 grams.
Amylum - - - 20 "
M. Sig. To be used as a dusting powder.

Scheppegrell.

The Serum Treatment of Diphtheria in New York Foundling Hospital During 1898.

NORTHRUP, W. P. (*Medical News*, Apr. 29, 1899.) The fatality was 12 1/2 per cent., which the author considers an extremely good result in infants. As an immunizing agent, he believes that antitoxin has attained almost ideal results. *Scheppegrell.*

Summer Care of the Tubercular.

PORTER, WM. (*Journ. Amer. Med. Assn.*, April 29, 1899.) The northern lake region, especially near Petoskey, Mich., has given the author good results in cases of tuberculosis and chronic broncho-pneumonia during the summer months. This refers especially to the Les Cheneaux country, some 10 miles north of Mackinac Island.

Scheppegrell.

The Use of Ozonized Air in Diseases of the Lungs and Air Passages.

PEAVY, J. F. (*Journ. Amer. Med. Assn.*, Apr. 29, 1899.) Ozone is recommended therapeutically for tuberculosis and is administered by placing the patient on an insulated stool connected with the positive-charged rod of a static electric machine.

[Where ozone is indicated, more effective results are obtained from the Siemens ozonizer, by means of which the ozone may be economically and scientifically prepared. S.] *Scheppegrell.*

Sarcoma of the Thyroid Gland.

MORF, P. F. (*Journ. Amer. Med. Assn.*, April 29, 1899.) Sarcoma of the thyroid gland is a rare disease and is more common in those countries where goitre is endemic. It is more frequent in persons whose thyroid is the seat of ordinary goitre. It is seen oftener in the male than in the female, and more frequently in late than in early life.

Statistics show the relative frequency of round-cell sarcoma, which corresponds with the clinical observations of the rapid course of these tumors. The cervical lymphatic glands are involved in a large number of cases. Metastases are relatively frequent in the lungs and in the bones. *Scheppegrell.*

The Maxillary Sinus, Chronic Empyema Thereof; its Treatment.

STUCKY, J. A. (*Journal American Med. Assn.*, March 4, 1899.) In the treatment of maxillary sinusitis, if the middle turbinate is so enlarged as to encroach upon the middle meatus or enough to obstruct the ostium maxillare, the anterior portion should be removed. In the majority of cases, the author found the operation of turbinectomy of the greatest value. If the ethmoidal cells are involved in the suppurative process or are otherwise diseased, radical treatment is indicated.

In the treatment of maxillary sinusitis, a large opening is made through the alveolar process into the antrum by means of a Buck mastoid drill, the second molar having first been extracted. The cavity should then be thoroughly inspected by means of the speculum introduced through the opening, and granulations, necrosis or other diseased processes thoroughly dealt with. The cavity is then

packed with gauze. A counter opening through the inferior meatus to facilitate drainage has not been found necessary by the author, and he does not think it advisable. *Scheppegrell.*

The Etiology of Phthisis; a Summary of Scientific Points Involved in Churchill's Theory.

GARDNER, R. W. (*Journ. American Med. Assn.*, Mar. 4, 1899.) The administration of an oxidizable and assimilable compound of phosphorus under certain determinate, pathologic and therapeutic conditions has the constant effect of preventing any fresh deposit of tubercular matter. To obtain this effect, however, the patient should be carefully watched; the doses of the particular indicated hypophosphite should be carefully graded to meet the immediate condition of the patient. Anodynes, narcotics, stimulants, cod-liver oil and other remedies designed to ameliorate certain prominent symptoms, such as coughs, night-sweats, etc., should be abandoned as they operate against the object sought to be attained by the hypophosphite treatment. Hypophosphites of soda, lime, and occasionally quinine are alone to be employed.

Scheppegrell.

The Relation of the Trachea and Bronchi to the Thoracic Walls, as Determined by the Roentgen Rays.

BLAKE, J. A. (*Amer. Journal of Med. Sciences*, Mar., 1899.) The radiographs and diagrams demonstrate the relation of the bronchial tree to both the posterior and anterior thoracic walls. They show the greater size of the right bronchus, which not only makes it capable of receiving larger bodies, but also throws the dividing spur between the bronchi to the left of the axis of the trachea. This is aided by the greater respiratory current and the direction of the right bronchus, which conforms to that of the trachea. The deviation of the trachea is caused by the aorta, which crowds it to the right side.

In making the radiographs, which are quite interesting, the greater transparency of the bronchial tree to the X-rays was overcome by the injection of proper substances impervious to the rays. *Scheppegrell.*

The Other Side of the Antitoxin Question.

HERMAN, J. E. (*Medical Record*, March 11, 1899.) A

careful discussion of the *pros* and *cons* of the antitoxin treatment, the verdict being against its use as a therapeutic measure. The author believes that the whole theory rests on unestablished ground, and is more surprised that physicians continue to use it than to the contrary.

Scheppegrell.

The Results in Administering the Antitoxin of Diphtheria as an Immunizing Agent.

ADAMS, S. S. (*Archives of Pediatrics*, June, 1899.) From an analysis of the cases under observation, it was decided that it was impossible to draw any definite conclusion as to the value of the immunizing dose of antitoxin. It is believed, however, that the dosage in the cases referred to was too small, and that if more units had been used, better results would have been obtained. The average duration of immunity conforms with that obtained by other observers. It seems probable that the larger the immunizing dose, the longer the duration of immunity. The immunizing dose of antitoxin has no injurious effect upon the kidneys. Urticaria appeared in two cases, this being the only pathologic effect of the antitoxin observed.

Scheppegrell.

Operative Treatment of Exophthalmic Goitre.

DOEPFNER, CARL. (*Journ. Amer. Med. Assn.*, June 3, 1899.) The patient who does not improve under a prolonged treatment of the reliable physician should be subjected to operation. Partial excision of the thyroid gland should be tried in the first place, and always where there is dislocation and compression of the trachea. *Scheppegrell.*

The Use of Schleich's Mixture for General Anesthesia in 110 Operations on the Nose and Throat.

MCLAUGHLIN. (*Journ. Amer. Med. Assn.*, June 3, 1899.) This method of anesthesia is very rapid and the usual excitement is entirely absent. When properly administered, these mixtures are safe, especially in short operations. *Scheppegrell.*

Tracheocele.

WEST, J. P. (*Achives of Pediatrics*, Apr., 1899.) A well-developed child of 20 months presented a swelling in the neck, which was first noticed five months before. The

last two months it has grown rapidly, the swelling now being the size of a hen's egg and on the left anterior neck just above the clavicle and well separated from the larynx and trachea. There is no fluctuation or crepitation. Continued pressure when the child is at ease causes three-fourths of the swelling to disappear, but it immediately returns to its original size when the pressure is removed. On prolonged or restrained expiration, as in crying, the original swelling increases to double its size.

Scheppegrell.

Surgery of the Trachea; Two Unusual Cases.

JONES, W. S. and KEEN, W. W. (*Journ. Amer. Med. Assn.*, June 10, 1899.) The first case reported is one of attempted suicide by cutting the throat, which was followed by complete closure of the trachea by a diaphragm above the cannula persisting for 13 months. Breathing through the larynx and speech were entirely impossible. The diaphragm was dissected away and the trachea sutured, the operation being followed by the restoration of normal breathing. The right recurrent laryngeal nerve was probably divided or wounded in the suicidal attempt, which accounted for the paralysis of the right vocal cord which persisted and resulted in a mild degree of hoarseness.

The second is a case of stricture of the trachea. The trachea was divided longitudinally, the mucous membrane deflected, the stricture excised, the entire wound being immediately sutured. Union resulted by first intention.

Notes on Cocain.

JENNY, W. P. (*Medical Record*, March 25, 1899.) Contrary to the opinion of most investigators, the author believes that cocain is absorbed through the unbroken skin to a sufficient degree to be of therapeutic value.

[Solutions of cocain are absorbed through the skin, but in so slow a manner as to be of very little service in the majority of cases. By cataphoresis, however, the absorption takes place with considerable rapidity. S.]

Scheppegrell.

Formalin in the Treatment of Whooping Cough.

OLLIPHANT, H. S. (*Journ. Amer. Med. Assn.*, March 4, 1899.) After experimenting with a solution of formalin

for a year the author believes it to be a specific. The duration of the severest cases was less than a week, and several were cured after three applications. Only weak solutions should be used. *Scheppegrell.*

Headache and its Relation to Diseases of the Eye, Ear, Throat and Nose.

JERVEY, J. W. (*Medical Record*, March 11, 1899.) In cases of headache these organs should be carefully examined. Where pathologic conditions exist, surgical or therapeutic measures frequently give prompt relief. Several cases are given in illustration. *Scheppegrell.*

The Sterilization of Instruments with Formaldehyd.

REIK, H. O. (*Phil. Med. Journal*, Feb. 4, 1899.) The author believes that formaldehyd is a convenient and economical means of disinfecting instruments.

Scheppegrell.

How Shall we Quarantine Against Diphtheria.

BRACKEN, H. M. (*Journ. Amer. Med. Assn.*, June 10, 1899.) The author believes our present methods of quarantine are inadequate. In view of the persistence of bacteria in the throat of patients recovering from diphtheria and the danger of sending them to school while this is the case, he believes that there should be special schools in order to avoid the loss of educational advantages resulting from such subjects remaining from school for so long a period. An ingenious but somewhat impracticable suggestion. *Scheppegrell.*

Medical Efficacy of Nosophen and Antinosin in Eye, Ear, Nose and Throat Affections.

LYDSTON, J. A. (*Journ. Amer. Med. Assn.*, June 24, 1899.) The author has found nothing to equal nosophen as a deodorizer in the purulent secretions characteristic of suppurative otitis media. Both nosophen and antinosin have been applied in all classes of cases with good results.

Scheppegrell.

Serum Therapy.

BUTLER, GEO. F. (*Journ. Amer. Med. Assn.*, May 27, 1899.) The present status of diphtheria antitoxin may be said to have established itself as a specific in the treatment

of diphtheria. During the past year the percentage of larger doses has become greater and it seems certain that better results have been obtained. *Scheppegrell.*

The Failure of Antitoxin in the Treatment of Diphtheria.

HERMAN, J. E. (*Medical Record*, May 27, 1899.) The author has collected considerable literature, showing that the mortality from diphtheria has not been lowered since the introduction of antitoxin, and also that the summary of statistics show that cases treated without antitoxin have had a lower mortality than those in which it was used. He believes that many lives have been sacrificed which might have been saved by the usual old-time remedies.

Scheppegrell.

PROCEEDINGS OF AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY, CINCINNATI, O., JUNE 2, 3, 1899.*

MASTOID OPERATIONS.

DR. MAX THORNER, Cincinnati, exhibited several interesting cases on whom he had done the mastoid operation. The first showed an excellent result, the large cavity in the mastoid being well covered with epidermis. There had been no discharge for almost a year. The patient was so well satisfied with the result obtained that he did not care to have a plastic operation done for the cosmetic effect. The second differed markedly from the first in that the first case presented an extradural abscess of eighteen years' standing, while in the second the symptoms developed very rapidly. The doctor is not in favor of the early closure of the opening with suture at the time of the operation or soon thereafter. The third case had complained of pain over the mastoid on several occasions, with intervals of almost complete freedom. Finally the pain increased, the temperature ran up to 101 degrees, and some swelling developed. On operation the mastoid was found full of granulation tissue and pus was demonstrated throughout the whole mastoid. Recovery was complete in some eight weeks after operation. The fourth case presented a somewhat similar condition of otitis media with discharge, which would stop and then open up again. Finally the pain became unbearable, although the temperature was only 100. On operation there was found great destruction of tissue, and pus was demonstrated throughout the mastoid. The entire cortex was removed and the operator went deep down into the mastoid. The third and fourth cases were remarkably similar.

THE FACIAL NERVE AS IT AFFECTS THE AURIST.†

DR. GEORGE L. RICHARDS, Fall River, Mass., read this

*From the Journal of the A. M. A.

†See ANNALS OF OTOLOGY, RHINOLOGY AND LARYNGOLOGY, May, 1899.

paper and presented a number of specimens which he had opened with the chisel to find the location of the facial nerve with especial reference to the mastoid operation. There are many variations in the course of the nerve, showing that its exact location cannot be predicted with certainty in any case. In the discussion that followed, a number of cases of facial paralysis following the mastoid operation were reported, some of which seemed to be permanent. The agents generally recommended for the treatment of facial paralysis were galvanism, faradism, massage and the use of strychnia and tonics.

ASTHMA AS A REFLEX MANIFESTATION FROM ABSCESS OF ANTRUM.

DR. CHARLES W. RICHARDSON, Washington, D. C., spoke of the reflex disturbances in the respiratory tract and other organs caused by pathologic changes within the nasal chambers and neighboring accessory cavities, the disturbances being at times so remote as to make it impossible to decide whether the relief of the accessory disturbance is an effect or an incident in the treatment. In the past three years he had had two cases of antral abscess attended by marked evidence of asthma, in both of which the asthma seemed to be excited in a reflex manner through the abscess of the antrum, and in which the asthma was relieved by the evacuation of the pus within the antral cavity.

TRAUMATIC HEMORRHAGE FROM NOSE AND PHARYNX WITH REPORT OF CASES.

DR. ROBERT C. MYLES, New York City, read this paper. He considered five important points: Whether the surgeon has any means of finding out before operation the probabilities of hemorrhage; if there is reason for suspecting excessive bleeding, whether there ought not to be more limitation in the area and depth in making sections and excisions. After each operation where there is a reasonable possibility of delayed or secondary hemorrhage, the patient should be kept within easy reach of the surgeon. Careful instruction should be given the attendant to watch the patient during the night. Several cases have been seen in which dangerous and alarming hemorrhages had

occurred, and the conditions were not discovered until the patients were nearly exsanguinated. As soon as the surgeon has evidence that he is dealing with a bleeder, he should apply expressed tampons of tanno-gallic acid. In the discussion that followed a number of cases of hemophilia were reported, in which obstinate hemorrhage came on within a few hours after operations on the upper air-passages.

REPORT OF CASE WHERE DEFECTIVE SPEECH RESULTS IN SOME INTERESTING DERANGEMENTS OF CEREBRAL FUNCTIONS.

DR. G. HUDSON MAKUEN, Philadelphia, reported the case of a boy 15 years of age, whose speech was so defective as to be scarcely understood. While he was apt in arithmetic, he had special trouble with everything in which the use of letters and words was required, being often unable to write the simplest words or to remember the names of letters and words that he had learned. His writing and spelling were very defective, but he was proficient in the use of figures. He was by no means feeble-minded, but there was some functional impairment in the action of the cortical visual word-center, resulting in partial word-blindness. When for any reason the development of the faculty of speech is delayed, there is a corresponding lack of functional activity in both the visual and auditory word-centers, as well as in those related areas of the brain employed in the use of language and thought. So great is the dependence of the functional activity of these special centers and their related areas on the use of the faculty of speech that its lack of development, due entirely to mechanic obstructions in the peripheral organs, has in some cases led to a diagnosis of imbecility and even idiocy. The author advised systematic speech training to determine whether the defective cerebration was of functional or organic origin. The improvement of his patient under this treatment had been marvelous, and illustrated the importance of special training as a remedial agent in certain forms of feeble mentality characterized by defective speech and other motor disturbances.

APPROPRIATE TREATMENT OF CERTAIN VARIETIES OF NASAL DEFLECTION AND REDUNDANCY.

DR. D. BRADEN KYLE, Philadelphia, in this paper gave

the following varieties of deflection of the septum: 1. The split cartilaginous septum with bulging into both nostrils. 2. Dislocation of the columnar cartilage. 3. Simple deflection in which the cartilage is very thin. 4. The letter S deflection. 5. Deflection of the cartilage with involvement of the bony septum. 6. Deflection due to the splitting of the cartilage with bulging on one side only. 7. Deflection in which there is redundancy of tissue overlapping the septum and extending close to the floor of the nose. Under deformities of the septum the paper dealt with the deviation or deflection from disease, traumatic deflection and congenital deflection. Concerning treatment, the author said that each deflection required some modification from a given method; no one operation would answer in all cases, as shown by the many methods proposed. The conditions presenting necessitate a combination of methods rather than the following of any one method.

USE OF RUBBER SPLINTS IN TREATMENT FOLLOWING INTRANASAL OPERATIONS.*

DR. J. PRICE BROWN, Toronto, Canada, read this paper. For tubage following intranasal operations the author thought that rubber splints made from thin rubber sheeting were superior to silver tubes, and much to be preferred to hard or perforated splints. They are smooth, compressible and elastic, can be readily cut to the required shape, and can be obtained of any thickness desired.

PYEMIC SINUS THROMBOSIS COMPLICATING PURULENT MASTOIDITIS WITH MULTIPLE EPIDURAL ABSCESS, CAUSED BY AN ACUTE OTITIS MEDIA. OPERATION. RECOVERY.

Dr. J. F. MCKERNON, of New York, read a paper on this subject. Some weeks previous, the patient had been operated on for polypi, after which he suffered an attack of facial paralysis, followed by intense pain in the left ear. The author considered the acute otitis the direct result of the erysipelatous inflammation traveling through the Eustachian tube and infecting the middle ear, as the discharge showed the streptococcus present. The complete disintegration of the mastoid he ascribed to the virulence

*See ANNALS OF OTOLOGY, RHINOLOGY AND LARYNGOLOGY, May, 1899.

of the inflammation. He considered the thrombosis due to his wounding the sinus at the mastoid operation. After the sinus was evacuated of pus, the patient did not convalesce satisfactorily until the metastatic deposit in the intestines had been evacuated, carrying away the poison in the system.

PHARNGOMYCOSIS.

Dr. LEWIS CLINE, Indianapolis, read this paper. This is a term applied to a fungus growth usually found attached to the posterior wall of the pharynx, in the orifices of the crypts of the tonsils, in the folds of the mucous membrane, behind the posterior pillars and on the base of the tongue. It consists of leptothrix, which rapidly develop into a vigorous growth. The symptoms are generally local, causing various degrees of irritation. Mycosis is a rare disease, although it is claimed that leptothrix is found in the majority of the mouths of patients examined. The disease must be differentiated from follicular tonsillitis, tonsillar concretions and diphtheria. The best treatment is the galvanocautery.

Dr. RICHARDSON referred to an article by a German writer in which it was claimed that the symptoms in cases such as those described by Dr. Cline were to be ascribed to the presence of a concretion rather than to a mycosis.

Dr. FRIEDENBERG called attention to the fact that the leptothrix causes a precipitation of earthy salts from solution.

Dr. STUCKY had secured good effect by the use of a 25 per cent. solution of pyoktanin rubbed into the masses two or three times a week. In a few weeks they would entirely disappear.

Dr. PRICE-BROWN had observed that the leptothrix was found not only on the surface, but also invading the mass, and reported several cases, one in a man who did his own grooming, a second in a man who worked two or three months polishing cows' horns, a third in a girl who worked in a brush factory, and lastly a case in a girl who was engaged for some time in making pillows out of the fluffy part of a weed. The cases seemed to indicate that the disease may originate from the inhalation of particles of the material with which the individuals worked.

Dr. LEVY called attention to the possibility that not all cases so described may be true cases of pharyngomycosis.

Dr. PHILLIPS observed that germicides seem to have little effect on the disease.

Dr. MYLES secured the best results by excising the masses.

Dr. LOEB had seen the disease twice in the same family, in a brother and sister, and had never seen a case of pharyngomycosis in which the lingual tonsil was not involved.

The society will meet in Philadelphia next year.

DR. MAX THORNER.

Dr. Max Thorner of Cincinnati, Ohio, an esteemed co-laborator of the ANNALS OF OTOLOGY, RHINOLOGY AND LARYNGOLOGY died August 26th. His many friends of this country and Europe share with us in our sorrow, which is the more acute since he was called away long before he had attained the climax of his possible usefulness.

Dr. Thorner had the rare gift of energy, untiring and uncomplaining, coupled with a mind that was never satisfied with the knowledge before him. It was on this account that he was, in so short a time, able to accomplish so much. Coming as a stranger to Cincinnati 14 years ago, he soon took front rank, and in these few years he had attained for himself a reputation that it is safe to say was unsurpassed by any one in the west.

He was born in Geestemunde, Germany, April 2nd, 1859, and was the son of Jacob and Bertha Thorner. He received his medical education in the Universities of Heidelberg, Leipsig and Munich, and pursued the study of his profession in the Hospitals of Vienna, Berlin and London. In the latter place he served as clinical assistant in the Hospitals for Diseases of the Throat and Chest, under Sir Morrell Mackenzie.

He was a member of the Academy of Medicine in Cincinnati, and served as President for one term. He has been, for some time, a member of the staff of the Cincinnati Hospital, the Jewish Hospital and the Ophthalmic Hospital. He had just been elected a member of the American Laryngological Association and was a member of the American Laryngological, Rhinological, Otological Society. He achieved his greatest distinction through the mastoid retractors, which he devised, likewise from his contribution upon the use of Salol in diseases of the nose and throat which it is said was the earliest publication upon this subject.

During the last few years, he was very much interested in direct laryngoscopy as suggested by Kirstein. He translated Kirstein's book into English, and developed the study of this particular plan of laryngoscopy in this coun-

try. His contributions to medical literature was as follows:

1. Foreign Bodies in the Larynx. (English and German.)
2. Salol in affections of Throat, Ear and Eye.
3. New Galvanocautery Handle.
4. Haematoma of the Septum Narium.
5. TinnitusAurium and Nasal Obstruction.
6. Chronic Rheumatic Throat Affections.
7. Imaginary Foreign Bodies.
8. Laryngectomy for Cancer of Larynx.
9. Object of Medical Societies. Address.
10. Benign Tumors of Larynx.
11. Thrush of Nose and Pharynx in Adults. (English and German.)
12. Atrophy of a laryngeal Fibroma in a Child. (French.)
13. Modified Tuberculin in Tubercul. Laryngitis.
14. Rheumatic Throat Affections. (Clinical Lecture.)
15. Intubation followed by fatal Edema.
16. The Management of Foreign Bodies in the Throat.
17. Acute Pharyngitis. (Burnett's System.)
18. Pathological Conditions following Piercing of Lobules.
19. Multiple Papillomata of Larynx.
20. New Mastoid Retractor.
21. The Autoscope.
22. Syphilis in Nose.
23. Serious Complications of Middle Ear Suppuration.
24. Removal of Foreign Body with Autoscope.
25. Practical experience with Autoscopy.
26. Autoscopy of the Air-passages. (Book of Kirstein.)
27. Uncommon Accident following Operations in Nose and Throat.
28. Primary Syphilis of Tonsil.
29. Intubation with improved Instruments.
30. Adeno Carcinoma of Nose.
31. Naso Pharyngual Tumor of unusual size.
32. The direct examination of the Larynx in Children.
33. The Asch operation.

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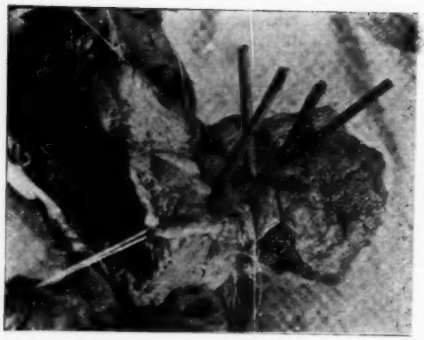

Plate I.

Plate II.

Tuberlocus of the Esophegus.